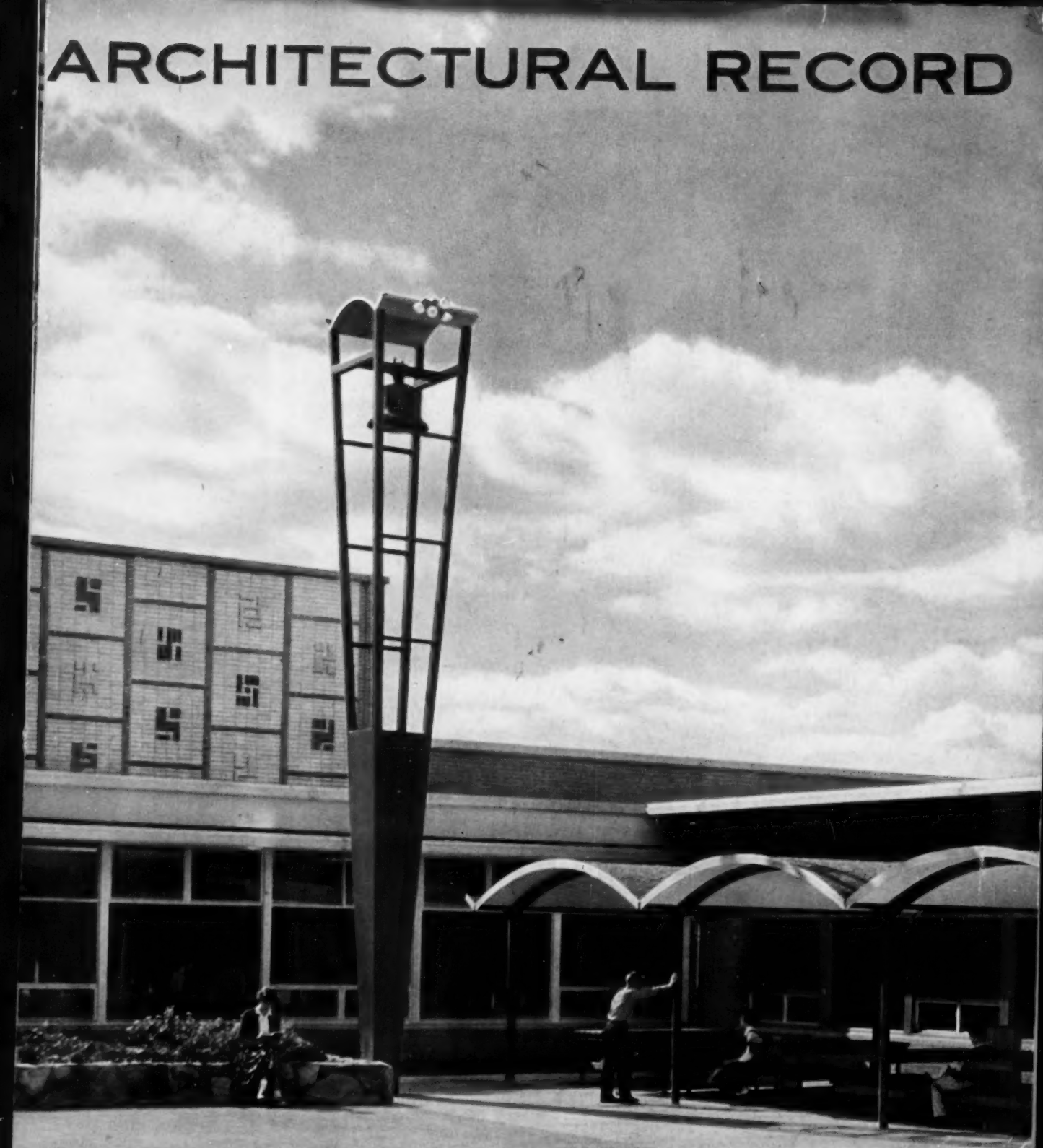
ARCHITECTURAL RECORD



BUILDING TYPES STUDY

SCHOOLS 233

APRIL 1956

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SPRINKLERS

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GRINNELL PROTECTION AGAINST EVERY FIRE HAZARD

Manufacturing, Engineering and Installation of Automatic Sprinklers Since 1878

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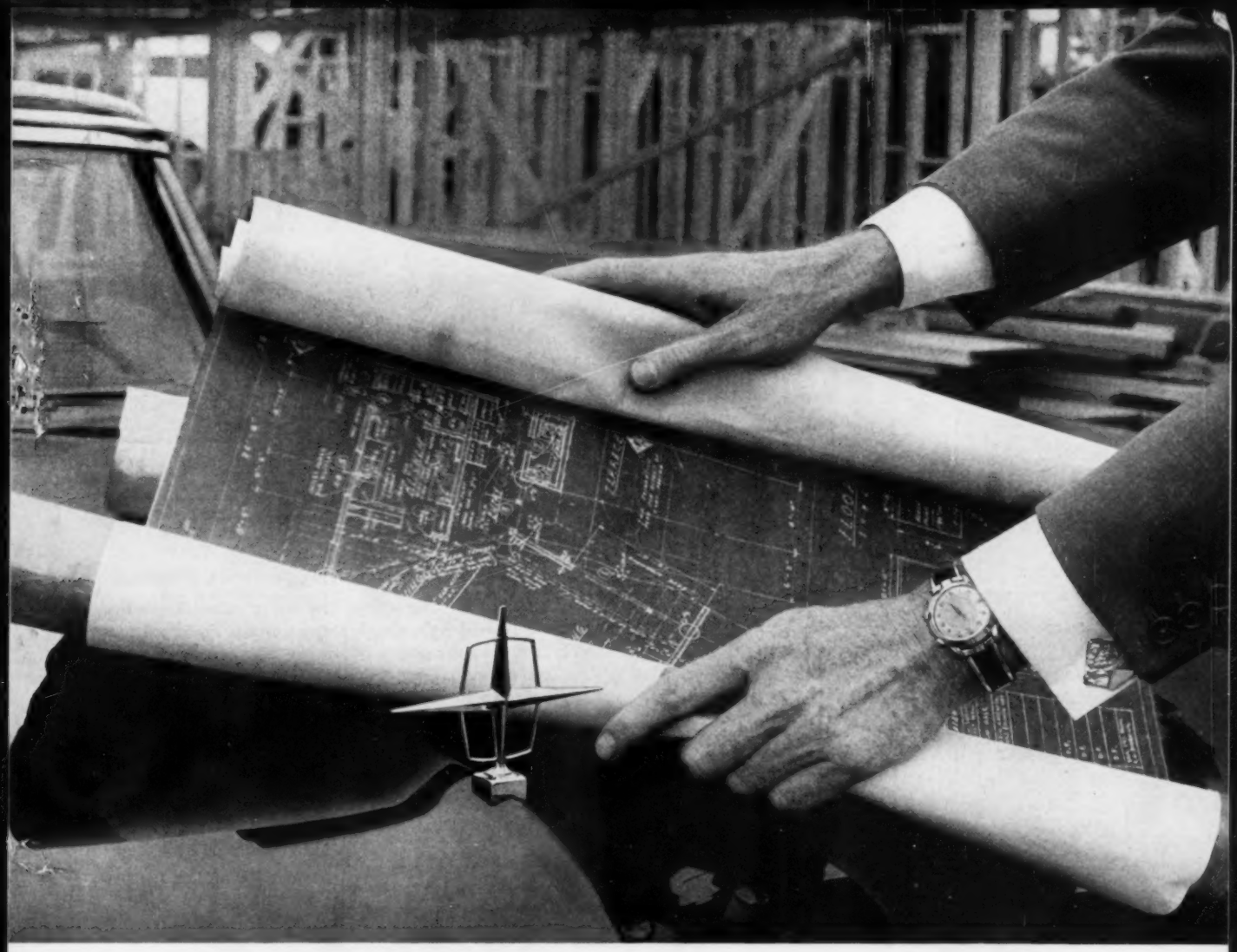

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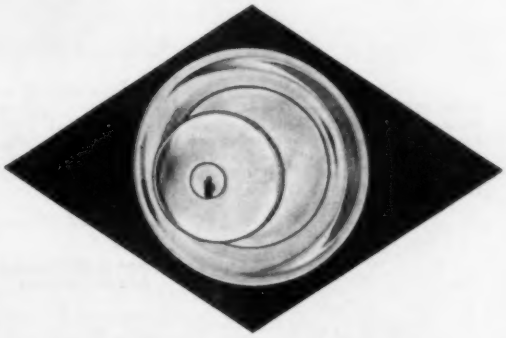

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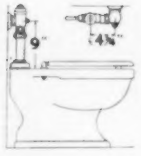

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M-432 IMPERIAL (Piston)

M-552 MAJESTIC (Diaphragm)
M-452 IMPERIAL (Piston)

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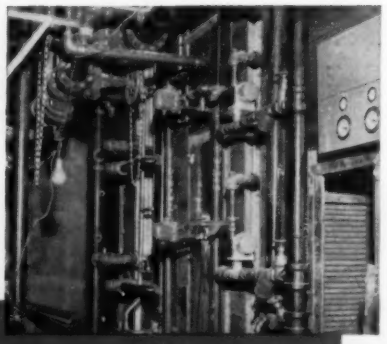

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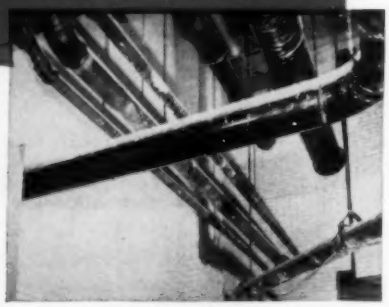

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Designers of Mile High Center applied the modern approach not only to architectural design, but also to material selection for piping services. Evidence of this practice is the selective use of wrought iron pipe. More than 24 tons are installed in service lines of this 23-story structure, located in the heart of downtown Denver, Colorado. Wrought Iron pipe, ranging from ¾-inch to 8-inch, is used to combat corrosion in condensate return lines, gas supply piping, and waste and vent services.

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Responsible for the increasing use of wrought iron pipe in modern building programs is the growing practice among architects and engineers to take a look into the past for their guide to today's material selection. You'll find plenty of support for wrought iron's durability and economy in the many case history reports covered in our bulletin, *Piping for Permanence.* Send for your copy, and learn how time-tested wrought iron can serve and save for you.

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ARCHITECTURAL RECORD

April 1956 Vol. 119 No. 4

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Havana Builds World's Tallest Concrete Apartment Building

"17 y M" COOPERATIVE APARTMENT BUILDING
Vedado, Havana, Cuba

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Architects:
ERNESTO GÓMEZ SAMPERA, MARTÍN DOMÍNGUEZ,
BARTOLOMÉ BESTARD, MANUEL PADRÓN

Structural Engineers:
LUIS SAENZ, E. R. CANCIO, IGNACIO MARTÍN

Contractor: PROYECTOS OBRAS Y CONSTRUCCIONES, S.A.

● Nearing completion in Havana's Vedado section is one of the world's outstanding buildings—the tallest concrete apartment house, rising 39 stories, a total of 402 ft. above its footings.

Floors of this high and mighty structure are two-way reinforced concrete slabs. Walls instead of columns support the building's full weight, serve as partitions between apartments and as wind bracing, in a fire-safe, rigid, monolithic structure built to resist winds of hurricane force. The cellular structure provided the architects with ideal clear floor areas.

Framing in concrete saved almost a million pesos, as compared with alternative methods, again emphasizing the economies inherent in reinforced concrete.

With 30 floors of apartments selling at an average price of $20,000 per apartment, and income from rental space on the other floors, the owners will recoup their investment of 6-million pesos (1 peso equals 1 dollar) when 80% of the apartments are sold.

Cuba's designers have a way with concrete, as is well exemplified by this dramatic structure, in which, when completed, a total of over 110,000 bbls. of cement produced by Lone Star's Cuban subsidiary, La Compañia Cubana de Cemento Portland, will have been used.

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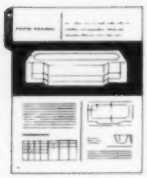

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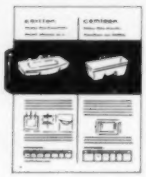

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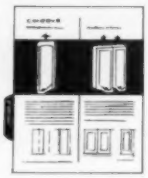

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THE RECORD REPORTS

PERSPECTIVES

THE ARCHITECT AND PUBLIC RELATIONS: a need for "reappraisal" of the American Institute of Architects' three-year-old public relations program was recognized by the A.I.A. Board of Directors last month with appointment of a special "liaison" committee to study operations of the program (see page 15). At the grass roots level, as indicated by reports from public relations sessions across the country, architects continued to wonder how to get their names in the newspapers. At one such session, arranged by the New York Chapter of the A.I.A., the editor of this magazine offered an appraisal of his own: the judgment that architectural public relations would benefit more from a "program of concentration" on specific *groups* of the public identifiable as actual client factors than from any kind of effort which takes as its target "a general, undifferentiated public." The trouble with focusing on the general public, Mr. Shear said, is that "the total force of available effort is spread so thin that it is unnoticeable. It spends equal effort and money on those who have nothing to do with retaining architects and on those who do make such decisions. . . . We simply haven't got the time and money to fight on this extended kind of front." Instead, Mr. Shear suggested, the profession should decide which parts of the public it is most concerned to reach, and concentrate its efforts on those who decide for or against retaining architects in such specific fields as might be suggested by relative activity of various building types and architect activity within them. On the matter of the means to be used, Mr. Shear thought there could be a more effective development of the service theme than has so far appeared, and noted that on the publicity side, the special publics must be reached through their own media — the journals and magazines they read and use in context with their work. "I am confident," Mr. Shear concluded, "that the recognition of the individual architect as well as the broad educative processes will develop eventually from such a program — but as by-products — not ends in themselves."

HIC LABOR: "If our buildings are monotonous," writes Robin Boyd in the February issue of the *Architectural Review*, "it is because our ideas are generally confined within a narrow range. Structure is approved as a stimulus by our unwritten architectural morality code rules; ideas based on shell-concrete or exposed steel cantilevers are always well accepted, but ideas based simply on the enjoyment of living, or springing from a sense of humor, or gaiety, or reverence, or mystery, or awe, are suspect, because we cannot bind them into a specification. They worry us; we wonder if they can be functional. Yet the question of functionalism should not enter until after the idea is formed. Then it will never let down the idea. It is never to be questioned; only our own lack of ideas is responsible for the coldness, the monotony of atmosphere, the constancy of mood, the limited range of expression in modern architecture."

ARCHITECTURE WINS AN ELECTION: The March issue of *The American City* has a story about a successful mayoralty campaign largely based on the candidate's proposed plan for improving his community — a development program he engaged two architects to help him prepare. Glen Cove, Long Island, population 15,000, is the astute community, Joseph Suozzi the new mayor, and Dean Olindo Grossi and Professor William Breger of Pratt Institute's School of Architecture were the architectural consultants. Mr. Suozzi's approach, said *The American City*, "highlighted the growing role that planning is assuming in local elections."

JOKE: The next time, in this long election year, somebody tries to tell you the one about Eisenhower and his running mate Ferris (*you* know, the big wheel from Coney Island), you might reciprocate with the following, which has already been reprinted in half a dozen A.I.A. bulletins since its (not exactly pristine) appearance in the Westchester Chapter's *Blueprint* a few months ago — "After 30 years' practice in New York City, an architect with a medium size office recently retired to Westchester and deposited $50,000 cash in a local bank. When asked for the secret of this financial accomplishment, he said: "I attribute my ability to retire with $50,000 after 30 years at architecture to close application to duty, always hewing to the mark and letting the chips fall where they may, the most vigorous rules of economy, never taking a vacation but everlastingly keeping at my job with enthusiasm, and the death of an uncle, who left me $49,999.50."

ARCHITECTURE AND POLITICS again: President Eisenhower has been called an architect before (usually with victory in Europe the subject edifice) but to the best of a recollection stretching all the way back to 1952, never, until last month, by Adlai Stevenson. Mr. Stevenson's comment on the President's decision to seek a second term credited him as "the Administration's chief architect" — an accident of political rhetoric which put the word "architect" on every front page in the country simultaneously for perhaps the first time in the history of the profession. The President's obligation is clear — he will need to do more — and his opportunity dazzling: *he* could say architect and mean *architect!*

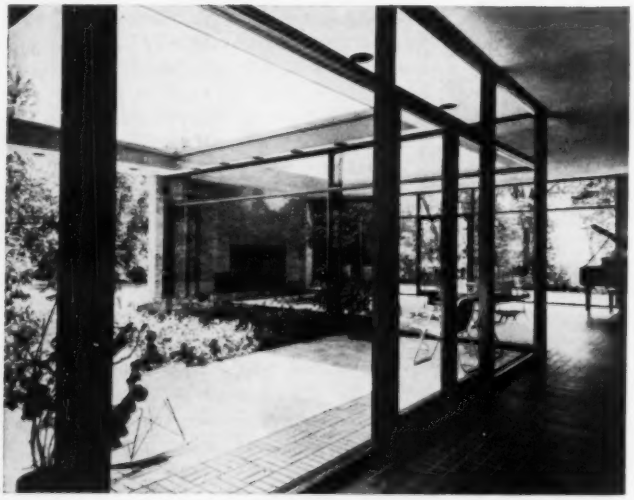
THE RECORD REPORTS
BUILDINGS IN THE NEWS

"OUTSTANDING AMERICAN ARCHITECTURE": A.I.A.'S EIGHTH ANNUAL COMPETITION

1956 Jury Met in Washington, D. C., March 5–6: Members — Pietro Belluschi, dean of M.I.T. School of Architecture and Planning; Eero Saarinen, Bloomfield Hills, Mich.; Paul Thiry, Seattle; Donald S. Nelson, Dallas; George B. Allison, Los Angeles

FIRST HONOR AWARDS

Lambert St. Louis Municipal Airport Terminal Building, St. Louis — Owner, City of St. Louis; Architects, Hellmuth, Yamasaki & Leinweber, St. Louis and Detroit; Engineers, Edgardo Contini (structural, for preliminary work), William C. E. Becker (structural), Roberts & Schaefer Co. (consulting structural), Ferris & Hamig (mechanical); General Contractor, L. & R. Construction Co. *(see this issue, pages 195–202)*



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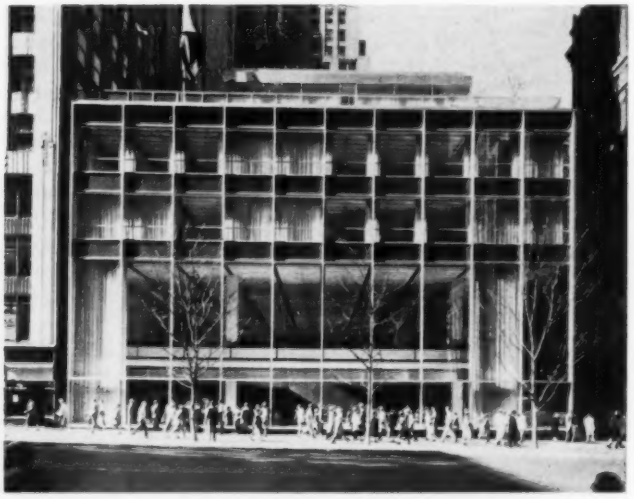
The Hodgson House, New Canaan, Conn. — Owner, Mr. and Mrs. Richard Hodgson; Architect, Philip C. Johnson, New York; Engineers, Eipel Engineering Company; Contractor, John C. Smith (AR, March 1953, pages 156–161)



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Manufacturers Trust Company Fifth Avenue Branch, New York City — Owner, Manufacturers Trust Company; Architect, Skidmore, Owings & Merrill, New York; General Contractor, George A. Fuller Company (AR, November 1954, pages 149–156)

Hillsdale High School, San Mateo Union High School District, San Mateo, Cal. — Owner, San Mateo Union High School District; Architects, John Lyon Reid & Partners, San Francisco; General Contractors, Rothschild, Raffin & Weirick, Northern Constructors

Roger Sturtevant

Center for Advanced Study in Behavioral Sciences Inc., Stanford University Grounds near Palo Alto, Cal. — Architects, Wurster, Bernardi & Emmons, San Francisco; Landscape Architect, Thomas D. Church; Consulting Engineer for Structural Design, William B. Gilbert; Contractor, Swinerton & Walberg

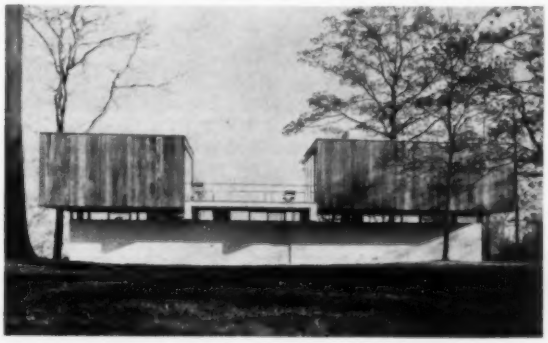
Julius Shulman

Residence, Whittier, Cal. — Owner, Mr. and Mrs. Edwin Krause; Architect, Raphael S. Soriano, Tiburon, Cal.; Contractor, J. Basso

House for Mr. and Mrs. Theodore Bernardi, Sausalito, Cal. — Architects, Wurster, Bernardi & Emmons; Consulting Engineer — A. V. Saph Jr.

House for Mr. and Mrs. Nelson T. Nowell, Stockton, Cal. — Architects, Wurster, Bernardi & Emmons; Landscape Architect, Thomas D. Church; Contractor, T. E. Williamson Inc.

Interfaith Center, Brandeis University, Waltham, Mass. — Architects, Harrison & Abramovitz, New York; Structural Engineers, Eipel Engineering Company; Mechanical Engineers, Sears & Kopf; Contractor, Lilly Construction Company (AR, September 1954, pages 9–11, and January 1956, pages 147–157)



Residence for Mr. and Mrs. Walter P. Swain, Jr., Plainfield, N. J. — Architect, Reginald Caywood Knight, Jasper Dudley Ward III, Associate; Structural Engineer, Strobel & Salzman; General Contractor, Adam Valentine

First Methodist Church, Midland, Mich. — Owner, First Methodist Church; Architect, Alden B. Dow, Midland; Mechanical Engineer, Hyde & Bobbio Inc.; Contractor, By Owner

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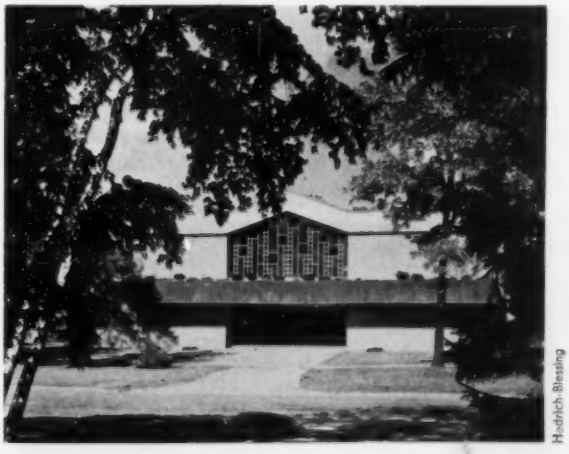


Hedrich-Blessing

(Continued from page 11)

AWARDS OF MERIT

© Ezra Stoller

Istanbul Hilton Hotel, Turkey — Owner, Turkish Republic Pension Fund; Architect, Skidmore, Owings & Merrill, Sedad H. Elden; Structural Engineer, Prof. Said Kuran; Interior Design, Jane Kidder, Director; General Contractor, Julius Begger, Dyckerhoff Widman (AR, January 1953, pages 103-116)

Morley Baer

Mark Thomas Inn, Del Monte, Monterey, Cal. — Owner, Delcorp Inc.; Architect, John Carl Warnecke, San Francisco; General Contractor, Haas & Haynie

Ulric Meisel

Building for Oak Cliff Savings & Loan Association, Dallas, Tex. — Architect, Prinz & Brooks, Dallas; Mechanical Engineer, Arnold Gaynor; Contractor, Burgher Construction Company

Marvin Rand

Architectural Office for Killingsworth, Brady and Smith, Long Beach, Cal. — Architects, Killingsworth, Brady and Smith; Structural Engineer, C. Gordon DeSwarte; Landscape Architect, Edward Lovell; Decorator, Stan Young; Contractor, Stromberg & Son

Ben Schnall

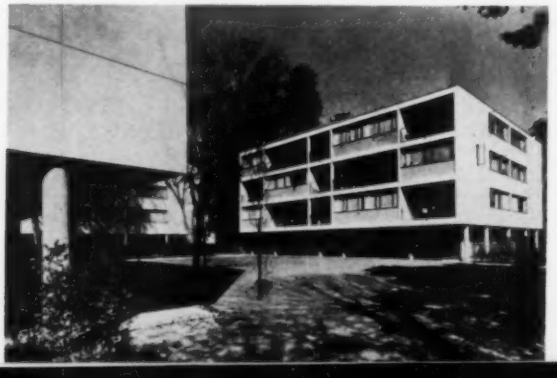
Schlumberger Administration Building, Ridgefield, Conn. — Owner, Schlumberger; Architect, Philip C. Johnson; Engineers, Eipel Engineering Company; Contractor, John C. Smith

Feld Clinic, Detroit — Owners, Doctors H. Weisberg, D. Feld, J. Weisberg; Architects, Yamasaki, Leinweber & Associates, Royal Oak, Mich.; Contractor, Trowell Construction Company

Police Facilities Building, Civic Center, Los Angeles — Owner, City of Los Angeles; Architect, Welton Becket & Associates, J. E. Stanton Associated; General Contractors, Ford J. Twaits Co. and Morrison-Knudsen Co.

Julius Shulman

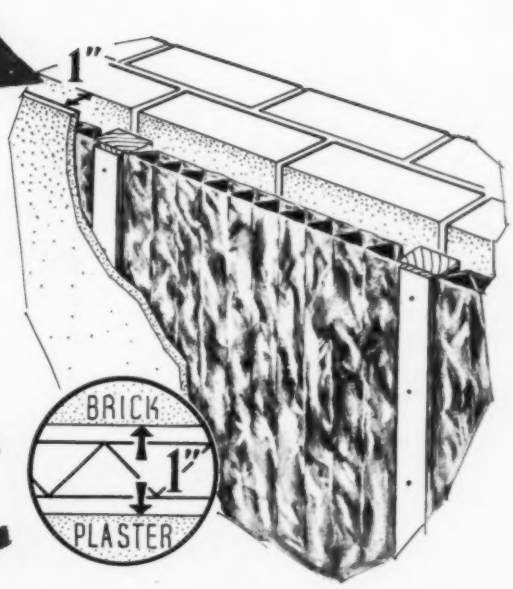
U. S. Embassy Staff Apartments, Neuilly and Boulogne, Paris, France — Owner, U. S. Department of State, through Foreign Buildings Operations; Architects, Ralph Rapson, John Van der Meulen, John Greenwood, in charge of construction



HOW TO

Insulate Masonry Walls Get 2" Insulation Value Create 1" Wall Space

PROTECT WALLS OF BRICK, STONE, CONCRETE AND CINDER BLOCK AGAINST HEAT LOSS, HEAT INTRUSION, AND DAMPNESS AT ABOUT 8¢ SQ. FT. (Insulation with Labor)



Insulate economically and effectively against heat and vapor flow in masonry construction, with 2 sheets of tough aluminum separated ½" apart by a flame, mold, and insect retardant accordion fiber. They install easily in one operation to furring strips. Only ½" deep installed, this insulation fits into the shallow 1" spaces created by the furring.

Comfortable areas can also be created in basements and other places in existing buildings for playrooms, storage, laundries, workshops, even living quarters; by this scientific construction of multiple aluminum and reflective spaces.

A MUST FOR SHALLOW SPACES

Cellar Walls	Air Ducts	Cold storage bins
Floor panels	Floors	Heated trucks
Airplanes	Ships	Prefab buildings
R.R. trains	Trailers	Freight cars
	Refrigerated trucks	

HEAT AND VAPOR FLOW RETARDED

With respect to radiant heat flow, the aluminum surfaces of this insulation have 97% reflectivity, and only 3% absorptivity and emissivity. Conduction is slight through the air spaces of low density. The layers of aluminum and fiber retard inner and outer convection. These comprise ALL methods of heat flow.

Because they are METALLIC and CONTINUOUS, the aluminum sheets are almost impervious to vapor flow. Infiltration under the flat flanges is slight. The possibility of condensation formation on or within this kind of insulation is minimized by the scientific construction of multiple layers of aluminum, fiber and air spaces.

This scientific insulation is commercially available as Infra Type 4 Jr. It has 4 reflective spaces, 2 outer, and 2 inner rows; and 4 reflective surfaces. Made for 16" centers, it is packed 500 sq. ft. to a carton in one continuous strip. It is also available with an asbestos partition.

HOW TO INSTALL

Attach 1" furring strips to walls on 16" centers. Tack flange of unopened Type 4 Jr. to *face* of furring strip with an occasional staple, bottom (flat) surface facing room. Expand insulation and tack to face of adjacent furring strip. Lap and tack flange of next piece of insulation *over* previously tacked flange of adjacent installed insulation. Nail rough lattice strip *over* combined flanges, which will prevent contact with subsequently installed lath or wall board, and create an additional air space.

The U.S. NATIONAL BUREAU OF STANDARDS has published an informative booklet describing the destruction which condensation can cause and means of preventing it. It is entitled "Moisture Condensation in Building Walls." Send us coupon for a FREE copy.

Get a FREE SAMPLE of this unusual insulation. Check the box in the coupon.

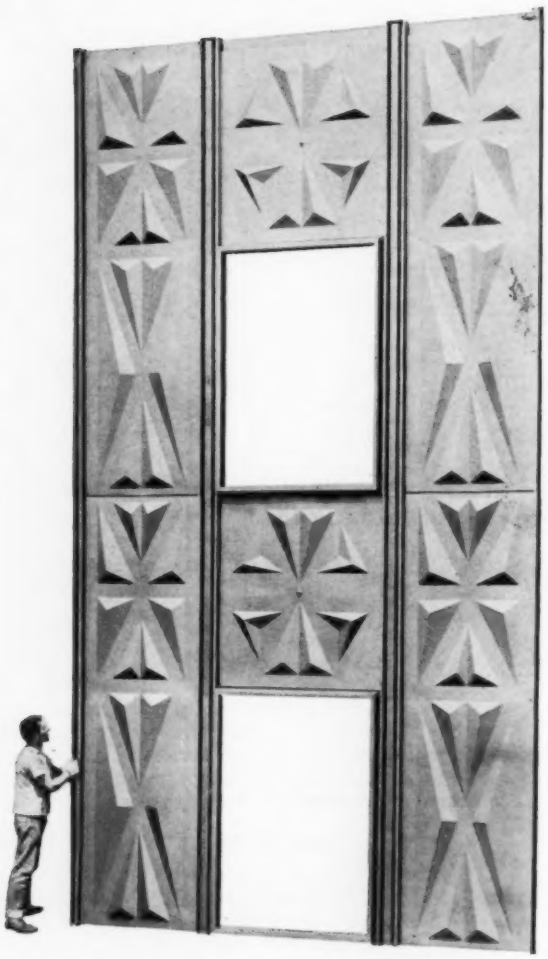
Infra Insulation, Inc.
525 Bway., New York, N. Y., Dept. R-4

Please send ☐ sample of Type 4 Jr.
☐ "Moisture Condensation in Building Walls."

Name_____

Firm_____

Address_____



NOW... ONE-PIECE PANEL STAMPINGS 7' by 15½'

Commercial Shearing fabricates stainless steel, aluminum and porcelain enameling steel

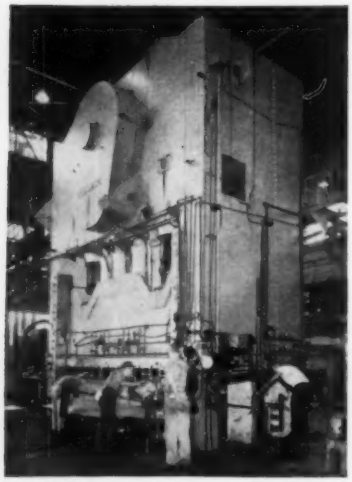
There's a huge 2000 ton press in Youngstown, Ohio, that means new possibilities in curtain wall design. For, now, panels and spandrels up to 7 ft. by 15½ ft. can be walloped out as single stampings . . . and, they roll off the press at a rate as high as 500 sections per day. Fast delivery—plus lower construction costs, because larger sections mean fewer pieces to handle.

Our "know-how" in architectural wall stamping stems from 30 years of experience in producing steel tunnel lining segments and air base landing mats. This knowledge permits you greater latitude in planning for the use of large panels; for once you have conceived the basic design and pattern, our engineers team with you to work out practical fabrication details and methods.

Whether you need large panels for the skin of a metal-clad building or for some other application, we can contribute to the teamwork necessary to produce a well-designed product, yet one that can be economically fabricated.

For further information, write today to Dept. M-14, The Commercial Shearing and Stamping Co., Youngstown, Ohio.

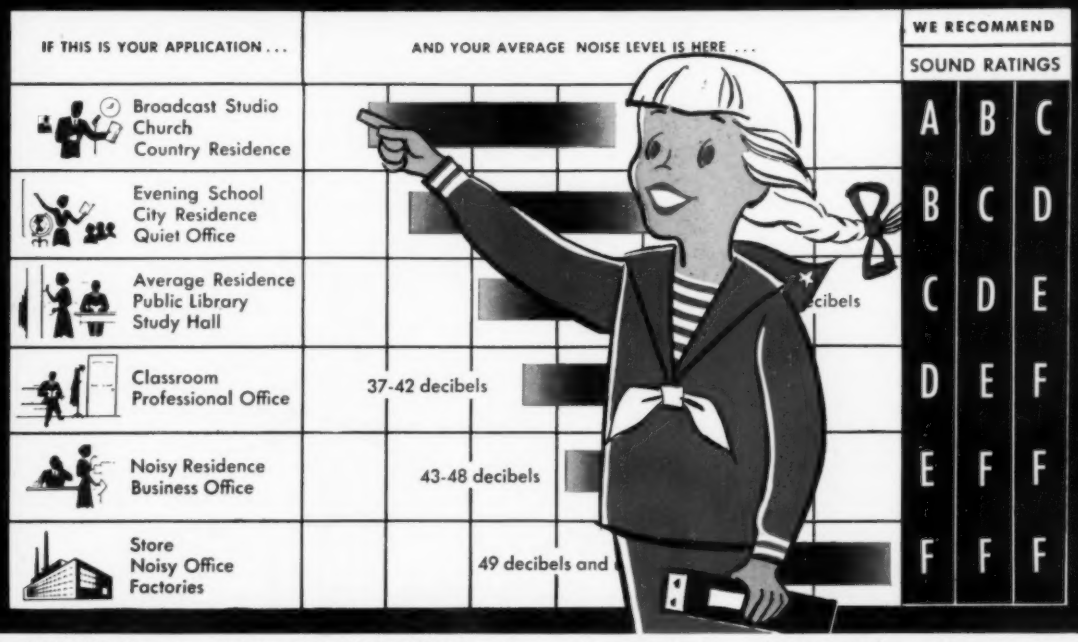
Here is one example of the type of panels and spandrels "Commercial" has fabricated through close cooperation between engineer and architect.



● 2000 ton press over 4 stories in height forms any size ornamental panel in varying dimensions up to 7' by 15½' from any suitable metal.

● 7000 stainless steel panels were fabricated at Commercial Shearing and Stamping for the exterior skin of the new Socony-Mobil Building.

COMMERCIAL
shearing and stamping



FLORA SHOWS YOU how easy it is to select a G-E ballast to meet your noise level requirements. For example: in a library installation where noise levels must be extremely low, or in a quiet office where ballast noise could interfere with work, G.E. has a ballast to do the job.

Flora* shows you why...

General Electric Sound-rated Ballasts Help You Save Lighting Dollars

Fluorescent lighting today is used in a countless variety of applications; from ultra-quiet broadcast studios and library reading rooms to noisy factories and offices. To help you select a lamp-ballast combination to meet the sound requirements of your installation, General Electric conducts extensive tests to measure the average sound level of each ballast model. This measurement is called "Sound Rating."

This exclusive G-E feature enables you to specify a model sound-rated to meet the needs of your fluorescent installation. You save valuable lighting dollars by reducing expensive noise complaints.

Next time you specify equipment for a fluorescent lighting installation, make sure you get the best . . . specify General Electric sound-rated ballasts. Look for the sound rating on the nameplate. A G-E ballast tag or sticker on your fixture is proof that it's equipped with the best in ballasts. It's the easy way to be certain. For further information on G-E ballasts, write Section 401-8, General Electric Company, Schenectady 5, New York.

*Miss Fluorescent Ballast, G.E.'s Ballast Mascot.

Copyright 1955, General Electric Company.

G-E BALLASTS operate more quietly than average ballasts, and G-E engineers are constantly testing new materials and methods in order to better control ballast noise.

Five more reasons why

GENERAL ELECTRIC IS YOUR BEST BALLAST VALUE

- **SUPERIOR QUALITY CONTROL**
- **LONGER BALLAST LIFE**
- **PRECISE LAMP-MATCHED DESIGN**
- **PROVED PRODUCT LEADERSHIP**
- **COMPLETE CUSTOMER SERVICES**

Progress Is Our Most Important Product

GENERAL ELECTRIC

(Continued from page 12)

17 BUILDINGS CITED IN 1956 CATHOLIC INSTITUTIONAL DESIGN AWARDS

The second annual Professional Competition for Better Catholic Institutional Design, sponsored by the magazine *Church Property Administration*, has produced awards to 17 buildings in the five categories of the competition — four First Awards and 13 Distinctive Design Awards.

Five architects comprised the jury of award — Brother Cajetan Baumann, O.F.M., A.I.A., New York; Frank Montana, A.I.A., head, School of Architecture, Notre Dame University; Paul C. Reilly, A.I.A., New York; George B. Beatty, A.I.A., Brooklyn; George J. Sole, A.I.A., New York.

The four First Awards are shown on this page. Distinctive Design Awards were given as follows:

A church seating less than 400 — St. Mary's Church, Milton, Wis., John J. Flad & Associates, architects; Church of the Annunziata, Ladue City, Mo., Maguolo & Quick, architects; St. Anthony's Church, Agassiz, B.C., Gardiner, Thornton, Gathe & Associates, architects.

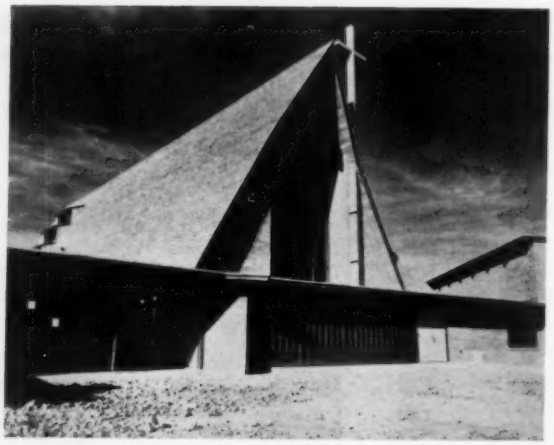
A grade school accommodating 350 or more — Sacred Heart Parish School, Covina, Cal.; Chaix & Johnson, architects; St. Philip the Apostle School, Clifton, N. J., Arthur Rigolo, architect.

A high school accommodating no more than 1000 — Academy of the Sisters of Mercy, Gwynedd Valley, Pa., Nolen & Swinburne, architects; Benedictine High School of St. Scholastica's Parish, Detroit, Diehl & Diehl, architects; Mount Carmel High School, Auburn, N. Y., Beardsley & Beardsley, architects.

A parish rectory — Rectory for St. Therese of the Child Jesus Parish, Philadelphia, Nolen & Swinburne, architects; St. John of God Rectory, Norwalk, Cal., Armet & Davis, architects; St. Philip the Apostle Rectory, Clifton, N. J., Arthur Rigolo, architect.

A parish convent — St. Mary Magdalen's Parish convent, San Antonio, Charles Blomfield, architect; St. Hilary Parish Convent, Pico, Cal., Chaix & Johnson, architects.

1



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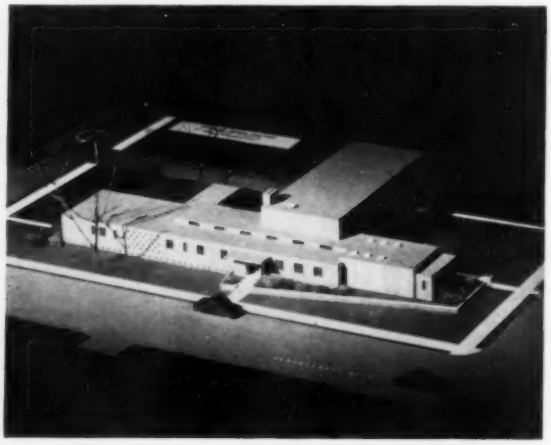


3

4

1. FIRST AWARD — "A high school accommodating no more than 1000." St. Patrick's High School, Chicago, Ill.; Belli & Belli, architects. The school is run by the Brothers of the Christian Schools

2. FIRST AWARD — "A church seating less than 400." St. Gabriel's Church, Chinook, Mont.; Bordeleau-Pannell, architects. "Powerful in its simplicity, with excellent use of structural materials"

3. FIRST AWARD — "A parish convent." St. Brigid Parish Convent, Detroit; Diehl & Diehl, architects. The convent accommodates 20 nuns

4. FIRST AWARD — "A grade school accommodating 350 or more." St. Teresa School, Trumbull, Conn.; J. Gerald Phelan, architect. The school contains 16 classrooms "excellently planned to conform to the bi-level possibilities of the sloping terrain"

(More news on 16B)

New suspended furniture (Italian concept) couldn't hang above an easier-to-clean floor.

B. F. Goodrich
introduces

Agatine

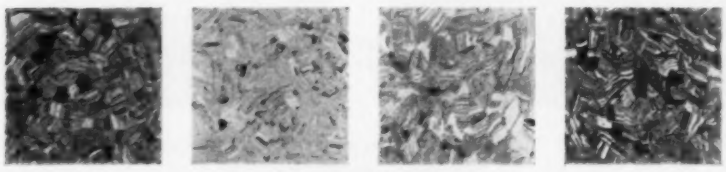
a new, exclusive and highly superior concept in floor tile!

No other tile like it: Made by a *unique* B. F. Goodrich process, "Agatine" is a homogeneous composition of tiny gems of color that go the full thickness of the tile. Its unusual appearance gives floors a clean sweep of distinctive and durable beauty.

Greatly reduces maintenance cost: "Agatine" is super-dense. Its non-porous surface will resist dirt, nicks and scratches; the design itself hides footmarks. A minimum of waxing preserves its lustrous factory finish. Even with the heaviest foot traffic "Agatine" will outlast the building.

For commercial or home use: "Agatine" has the quiet and comfort of rubber tile. It can be installed on or above grade, over wood or concrete—with or without radiant heating. 9" x 9" tiles come in 16 colors—.80 gage (for homes and light traffic areas) and 1/8" (for commercial use).

World's easiest-to-clean room (shown left) features "Agatine."



4 OF THE 16 BEAUTIFUL AGATINE COLORS

B.F.Goodrich

FOR SPECIFICATIONS:
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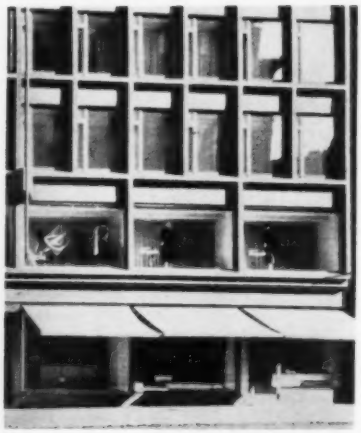
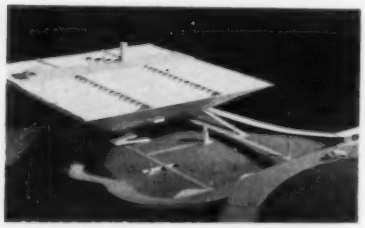
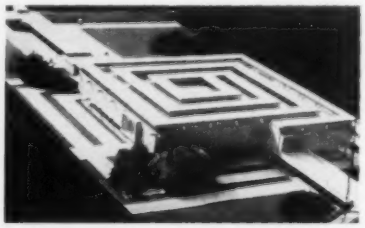
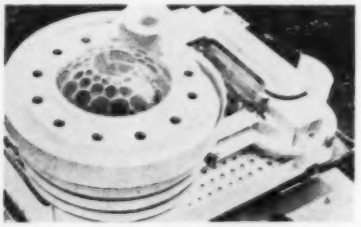


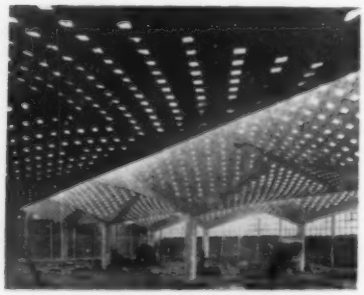
CASABELLA, *No. 208 (Italy), showed photographs of Alvar Aalto's recently completed Rautatalo Building in Helsinki. Eight stories high, it was designed around a central well, which is roofed at the fourth floor to create the entrance hall. The roof is pierced for illumination by "monolithic cones of sheet glass" serving as skylights. The external facing of the building is copper sheeting, placed over a concrete frame. Shops and a cafe occupy the lower floors; the upper floors are for office rental. The original design, selected by a competition, was changed slightly to conform with existing buildings in the neighborhood, including the thirty-year-old building next door designed by Eliel Saarinen*

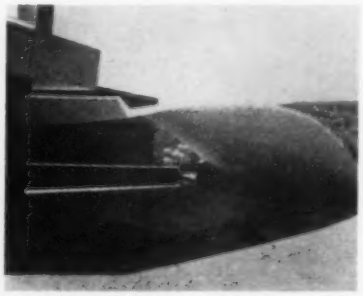






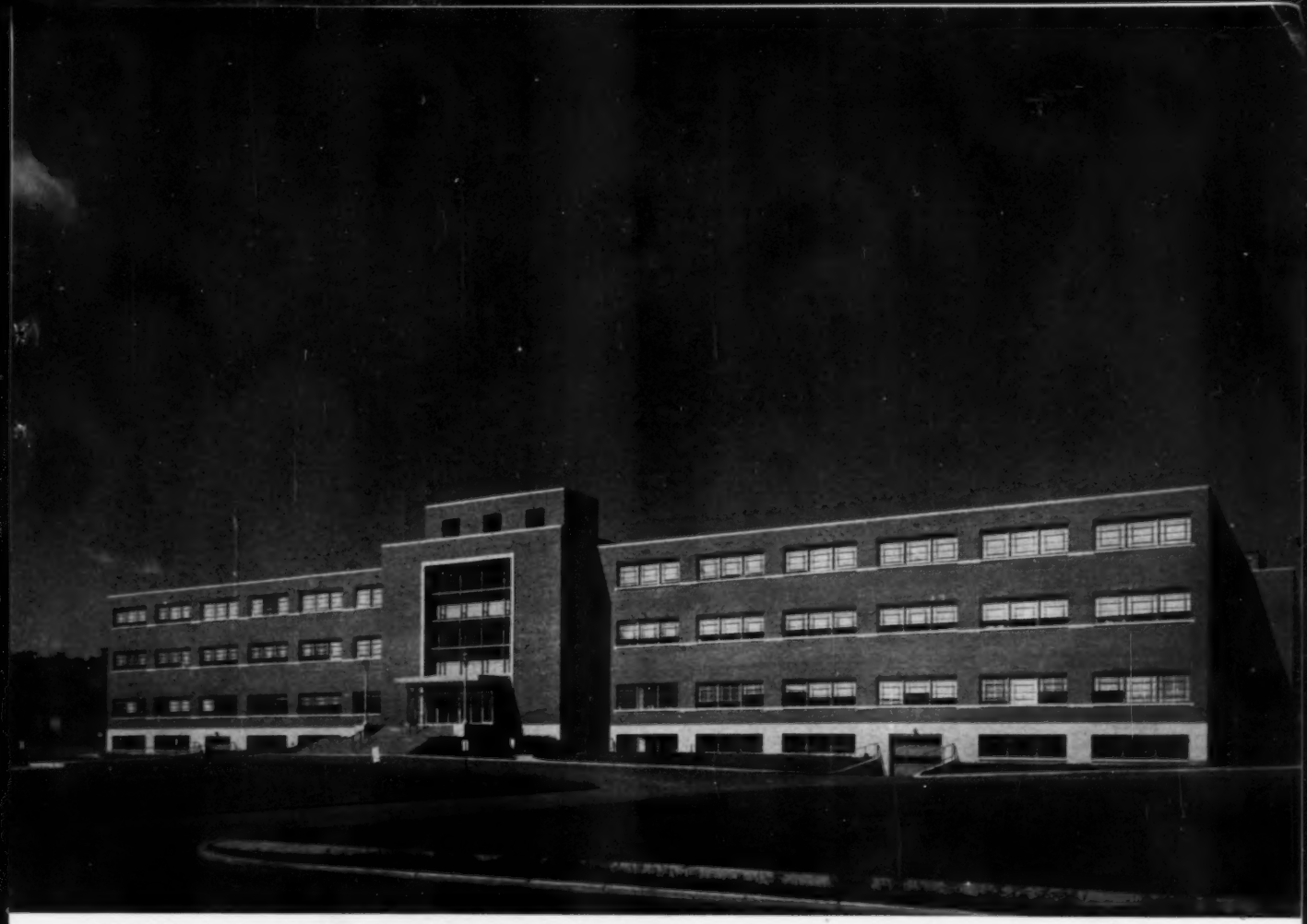
INTEGRAL, *December 1955 (Venezuela), in an article devoted to Oscar Niemeyer's project for a Museum of Modern Art in Caracas, displayed three contemporary approaches to museum design: Niemeyer, at left; Le Corbusier, center; and Frank Lloyd Wright, at right. Neimeyer's Caracas museum will be built as a sort of square bowl, designed this way to make the most of natural light. The roof will have aluminum louvers to control illumination. Corbu's museum, designed for Ahmedebad, India, has a spiral plan, is under construction. Wright's Guggenheim Museum is still hanging fire*





ARQUITECTURA MEXICO, *December 1955 (Mexico), featured a critical study by architect Giovanni Maria Cosco on the work of architect Felix Candela. The examples shown of Mr. Candela's work in thin shells included photographs of a clothing factory at Coyoacán, D. F. (left); a garage for a house in the Pedregal district of Mexico City, done with architect Horacio Almada (center); and an industrial development, also in the Mexico City region*

(More news on page 30)



Office Building for Simmons Machine Tool Corp. Menands, New York. Owner-Designed. Contractor: Lang-Finn Construction Co. Lupton Architectural Projected Windows

Welcome anywhere . . . with Lupton Windows

When business buildings are "dressed" like the one above they find a welcome anywhere . . . in town . . . in the suburbs . . . in the country. A flattering echo in graceful simplicity are the Lupton Projected Windows. But they have more than just beauty to offer. Their slim, trim lines are made from sturdy metal, precision engineered and designed for a lifetime of low-maintenance service. The quality and design of Lupton Metal Windows isn't accidental. It's the result of fifty years' experience. When you specify Lupton, you help insure client satisfaction, through windows that have stood the test of time.

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Here's the newest development for efficiently controlling the diffusion of forced air. It's the first truly "convertible" ceiling and sidewall diffusion grille . . . *THAT'S EQUALLY EFFICIENT WHEN HANDLING EITHER COOLED OR HEATED AIR.*

Greater free area and *individual louver adjustment* make this amazing performance possible.

Installation requires less labor. Requires no unhandy equipment to convert from cool to heated air. Just a simple matter of moving the louvers. Equally adaptable to old or new installations.

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BUT ECONOMY IS IMPORTANT

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Abraham W. Geller,
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Where the highest standards are faced with essential economy considerations, more and more architects are specifying MATICO tile flooring for many of the country's finest medical institutions.

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No wonder, then, that leading architects specify MATICO for hospital projects all across the country.

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DEPT. 8-9, P.O. BOX 986, NEWBURGH, N. Y.

Please send me full details on Matico Tile Flooring.

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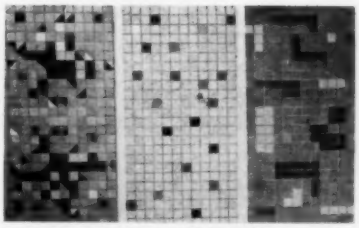
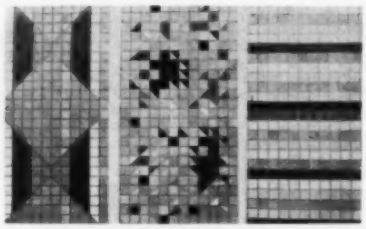
CITY.....ZONE.....STATE.....

The State of Construction

As the latest figures on contracts awarded in the 37 eastern states were announced by F. W. Dodge Corporation, the year 1956 had two legs on a new annual record — like January, February set new records for the month in all three major categories (see page 450 for details). Dr. George Cline Smith, Dodge vice president and economist, noted that new contract trends for the first two months of the year indicate the construction industry got off to a much better start for the year than most analysts expected. Addressing the Boston Chapter of the Producers' Council last month, Doctor Smith said that the most striking feature of the current upsurge in construction was the strength of industrial, utility and public works contracts. But he also called attention to the upturn in residential contracts — "Almost everyone," he said, "expected the housing downturn which began late in 1955 to continue for several more months at least. But residential contract awards in the first two months of this year, as compiled from Dodge Reports in the 37 eastern states, actually ran six per cent ahead of the same period last year. The total of $1.5 billion of residential awards was a new record for any January-February period. It is true that the number of housing units involved was slightly below the same period a year ago. However, the difference, especially in February, was so slight as to indicate that the decline had leveled off. And it is important to remember that houses are increasing in size, in equipment and in cost, so that the dollar volume of residential awards has been increasing substantially in spite of the small drop in number of units." Doctor Smith thought the strength of business investment, as it shows up in the industrial, commercial and utility figures, "indicates a high degree of confidence that today's record levels of production and sales are not a peak, but merely a step toward higher levels ahead."





TILES BY MAX SPIVAK (examples shown above) are the latest entry in the field of commercial products designed by top-rank fine artists — a coordinated group of nine patterns for the Cambridge Tile Manufacturing Company executed in unglazed tiles mounted on one- by two-ft paper sheets for quick installation. Colors and patterns were planned for use in various combinations as well as singly

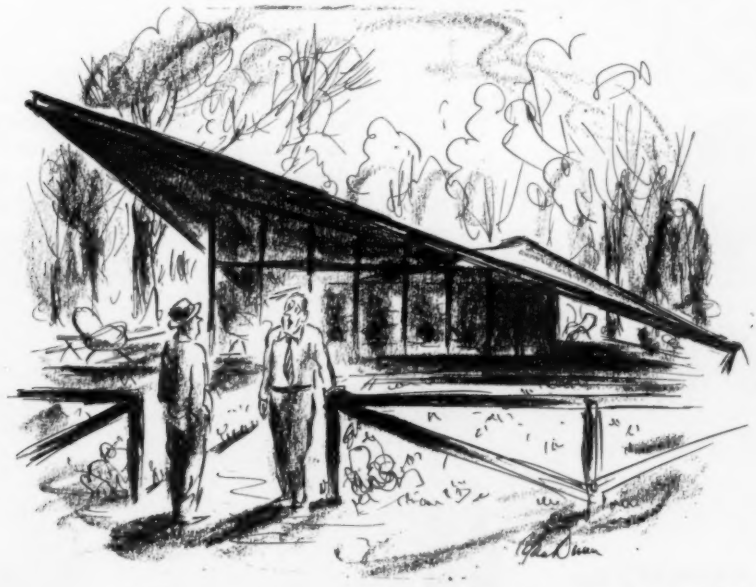
Stein Gets A.I.A. Gold Medal

The 1956 Gold Medal of the American Institute of Architects, highest honor in the gift of the profession to one of its number, will be awarded to Clarence S. Stein of New York in traditional ceremonies at the annual banquet at the A.I.A. national convention in Los Angeles next month. The award honors an American architect who is known around the world for his pioneering work in city planning. Other major 1956 A.I.A. awards will be given to Hildreth Meiere, New York painter, who will receive the Fine Arts Medal, and Harry Bertoia, also of New York, who will receive the Craftsmanship Medal.

The State of the Profession

Selection of 1956 honors recipients was one of innumerable items on the agenda of the A.I.A. Board of Directors at its annual meeting in Washington last month. In addition to hearing and acting on the many reports of national A.I.A. committees, the Board gave special attention to the public relations program at this meeting, but the only immediate result was appointment of a "liaison committee" consisting of A.I.A. Secretary Edward Wilson and Regional Directors Austin Mather and Donald Beach Kirby "to enter immediately into consultation with the PR Committee and the staff to study and work out details of changes to accomplish necessary improvements that will strengthen the methods of coordinating and integrating the program," as the A.I.A. *Memo* reported it. The Board has asked for a report on this study at its Fall 1956 meeting. The Board "confirmed its previous decision to engage Ketchum Inc., which will be retained as PR counsel for the remainder of the year," said the *Memo*. Additional appointments to the Public Relations Committee, to expand it, as the Board voted last Fall to

(Continued on page 24)



— Drawn for the RECORD *by Alan Dunn*

"She's gone — said she wouldn't live under the same hyperbolic paraboloid with me —"

LATH and plaster for

MODERN DESIGN

Only Lath and Plaster can provide effects like this staircase and lighting canopy at the Miller Brewing Company, Milwaukee, Wis.

SAVES $60,000, 30 DAYS

Simplified construction technique using lath and plaster reduced framing costs and completion time at John Wanamaker store, Wynnewood, Pa.

HELPS SELL HOMES

By serving as an assurance of quality construction throughout, lath and plaster boosts sales for builders like Joseph Lupowitz & Sons, Inc., Philadelphia, Pa.

ACOUSTICAL TREATMENT

Acoustical Plaster provides quiet, restful surroundings in applications like this new dormitory at Michigan State University, East Lansing, Mich.

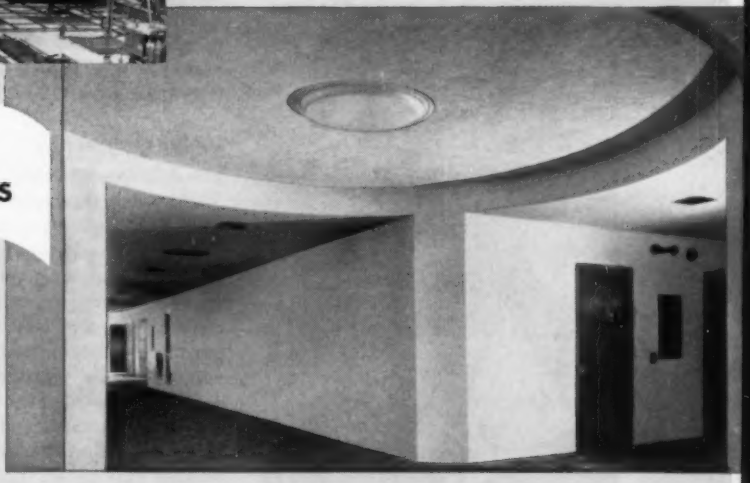
So Many Reasons...

FIREPROOFING

Lath and plaster economically provides the fireproofing needed in structures like Chrysler Corporation's new body paint and finishing plant.

LOW INSURANCE RATES

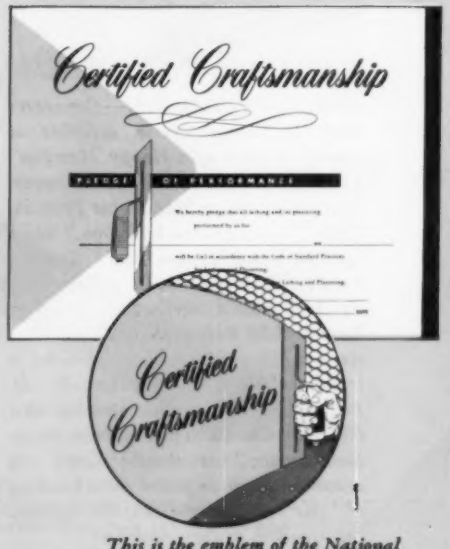
Substantial savings in insurance rates are made through use of lath and plaster in many buildings like Deerpath School, Lake Forest, Ill.



Certified Craftsmanship

• The Certified Craftsmanship Certificate is a written pledge of adherence to work schedules, job cooperation, work of craftsmanship caliber and nationally recognized standards of quality. A certificate is yours for the asking from lathing and plastering contractors adhering to the code of Standard Practices for Lathing and Plastering.

We suggest a thorough reading of the Code of Standard Practices which appears on the back of every certificate. Ask your lathing and plastering contractor for a copy, or write National Bureau for Lathing and Plastering, 1401 K Street, N.W., Washington 5, D. C.



This is the emblem of the National Bureau for Lathing and Plastering. It symbolizes high standards of job performance and responsibility.

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METAL LATH MANUFACTURERS ASSOCIATION
PERLITE INSTITUTE • VERMICULITE INSTITUTE

THE RECORD REPORTS

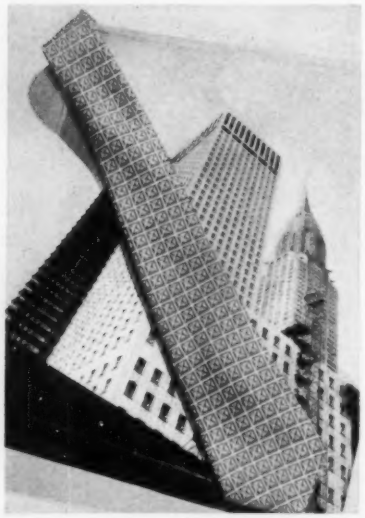
MEETINGS AND MISCELLANY

(Continued from page 21)

do, to 13 members representing all A.I.A. regions, have now been made. John W. Root continues as chairman.

Setting a Precedent

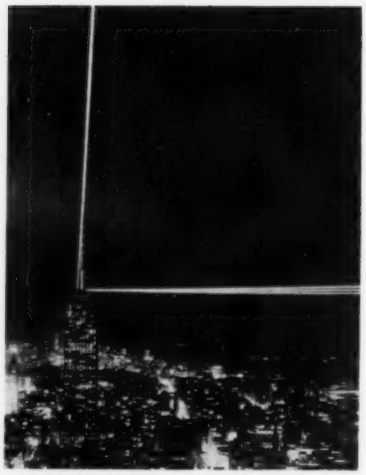
The A.I.A.'s hardworking president, George Bain Cummings of Binghamton, N.Y., who is just completing his first one-year term, has announced that he will not be a candidate for reelection in the balloting at the annual convention May 14–18. Mr. Cummings said he was stepping down in a deliberate effort to set a one-term precedent so that in future potential candidates for the presidency need not feel they must be prepared to give two years of service or refuse nomination. In his year as president, Mr. Cummings estimates that he has devoted a third of his time to the job. Reversal of the general expectation that, as has been customary with A.I.A. presidents, Mr. Cummings would seek and receive a second term, left the field wide open. At the time of Mr. Cummings' announcement the first week in March, there was nobody else officially *in* the field — no nominations had been received at A.I.A. headquarters for any of the five offices (besides president, first and second vice presidents, secretary, treasurer) which must be filled at next month's election. The only name publicly mentioned in connection with the presidency (in a rather offhand reference in an *Architectural Forum* article about something else) was that of Hugh Stubbins Jr., of Lexington, Mass., who was last year a candidate for the A.I.A. second vice presidency. Mr. Stubbins, however, expressed himself as completely unaware that his name had even been mentioned and said that if there had been any activity in his behalf he hadn't heard about it. Pre-convention nominations close April 4.



ARCHITECTURAL TIE — Comes now what the release caption describes as (above) "Picture of a Happy Marriage" — a tie called "Perennial Classic," newest of posh Manhattan haberdasher Bronzini Ltd.'s "Graeco-Roman Collection," which has been copied "almost intact," Bronzini reports, "from the newest glamour girl on Manhattan's skyline, the 45-story Socony-Mobil Building." Architects Harrison & Abramovitz will be interested to know that Bronzini president W. D. Blackwell's study of their stainless steel façade convinced him that the basic design elements are "unmistakably Greek and Roman" though he found their handling of "this classic theme" in this building "strictly 20th century American"

Happy Contractors

The Associated General Contractors of America, Inc. conducted the business of their 37th annual convention in New York a few weeks ago against a background of continuing optimism. The annual preconvention telegraphic survey of member chapters had indicated that contractors look forward to brisk business during the next half year at least. A $60 billion volume for 1956 — including all new construction and improvements to existing structures — was confidently anticipated. The 1955 total, a record, was $42.25 billion in new construction alone, a 12 per cent increase over 1954. The annual report of H. E. Foreman, A.G.C.'s managing director, called attention to the fact that construction last year accounted for 15 per cent of all goods and services produced in the nation, and was responsible for 15 per cent of all employment. He mentioned recent Federal government studies that show a very bright future, particularly in the public works field. Surveys of state and local public works needs put these at $200 billion over the next 10 years. The present rate of outlay will have to be doubled if this requirement is to be satisfied. The more than 1600 attending the New York meetings installed Frank J. Rooney of Miami as 1956 president. He succeeded George C. Koss of Des Moines. The new vice president is Lester C. Rogers, president of Bates & Rogers Construction Co., of Chicago. His father, Walter A. Rogers, in 1920 was the second president of the A.G.C., and preceded his son as president of the Bates & Rogers organization, a heavy construction and railroad firm. The general contractors spent quite a bit of time discussing methods of combating efforts of specialty contractors to secure new Federal legislation which would force the separate listing of subcontractors on government work exceeding $100,000 per contract. The specialty contractors are again trying to persuade Congress to pass the Federal Construction Contract Bill, S. 1644. The generals look upon this as a foot-in-the-door effort which would lead to the inclusion of state and other types of construction if enacted by Congress. A.G.C. determined to try to block the legislation before it could reach the House floor. The building division expressed its satisfaction with plans of the American Institute of Architects to revise its architects' practice handbook. Not consulted when the handbook first was prepared, the general contractors now are conferring with A.I.A. on the revision and on standards specifications.— *Ernest Mickel*



SO SYMBOLIC — After all these years, they're going to make the Empire State Building a symbol. What will do it? — an "electronic tiara of four super-powerful revolving and elevating night beacons" to be installed (photo above) 1092 ft above Manhattan streets. These, with their "eight position cycle of dramatic sky-sweeping movement," will be visible in six Eastern states, on the ground from 80 miles, and from the air 300 miles. Federal Sign and Signal Corporation is engineering, building and installing the addition to the Shreve, Lamb & Harmon skyscraper

Announcing Kencork in new lighter random shades

FOR FLOORS AND WALLS

Packed 3 ways: light, medium, dark

- Only Kencork gives you this choice of light natural baked cork shades . . . no harsh contrasts.
- Now you can specify especially selected all light, all medium or all dark random floors or mix and blend any of the three shades for fuller randoms with the new, wanted light-tone look.
- Kencork is now available in new economical 1/8″ thickness.
- Kencork now has greater flexibility, is ideal over wood floors.
- New plastic-fortified factory finish gives Kencork a more durable finish that is easier to clean.
- Sizes: 6″ x 12″, 9″ x 9″, 12″ x 12″ and 12″ x 24″. Square edges. Natural or factory finish.
- Thicknesses: 1/8″, 3/16″, 5/16″ and 1/2″.
- Installation: over any smooth, firm, clean interior floor . . . over concrete in contact with earth where drainage is away from building and subfloor a minimum 12″ above grade.
- Architects' samples available: Kentile, Inc., 58 2nd Ave., B'klyn 15, N. Y.

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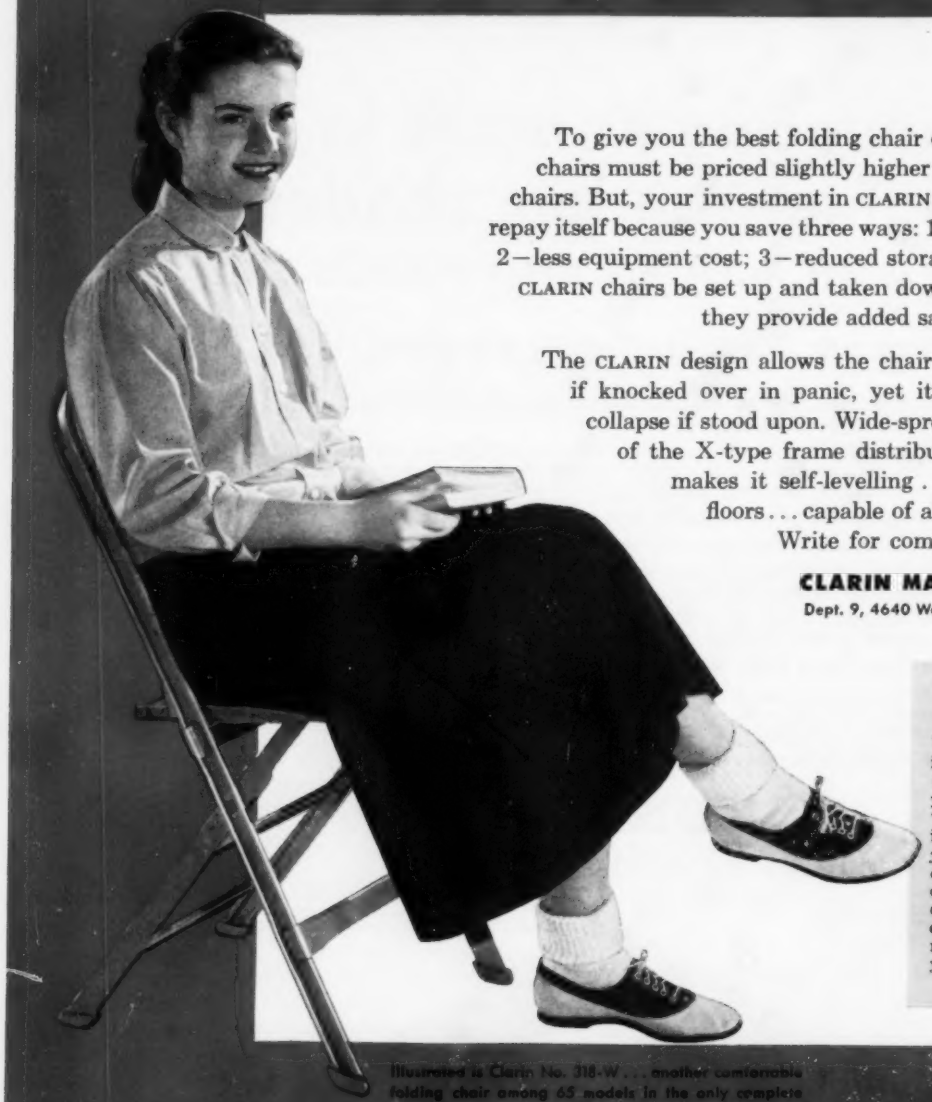
KENTILE, INC., 58 SECOND AVENUE, BROOKLYN 15, NEW YORK • 350 FIFTH AVENUE, NEW YORK 1, NEW YORK • 705 ARCHITECTS BUILDING, 17TH AND SANSOM STREETS, PHILADELPHIA 3, PENNSYLVANIA • 1211 NBC BUILDING, CLEVELAND 14, OHIO • 900 PEACHTREE STREET N.E., ATLANTA 9, GEORGIA 1016 CENTRAL STREET, KANSAS CITY 5, MISSOURI • 4532 SO. KOLIN AVENUE, CHICAGO 32, ILLINOIS • 4501 SANTA FE AVENUE, LOS ANGELES 58, CALIFORNIA

CLARIN CHAIRS SAVE STORAGE



To give you the best folding chair on the market, CLARIN chairs must be priced slightly higher than ordinary tubular chairs. But, your investment in CLARIN quality will more than repay itself because you save three ways: 1—lower handling cost; 2—less equipment cost; 3—reduced storage cost. Not only can CLARIN chairs be set up and taken down in shorter time, but they provide added safety that's important.

The CLARIN design allows the chair to fold automatically if knocked over in panic, yet it will not accidentally collapse if stood upon. Wide-spread 4-point suspension of the X-type frame distributes weight equally... makes it self-levelling . . . adjusts to uneven floors... capable of absorbing heavy shock. Write for complete colorful catalog.

CLARIN MANUFACTURING CO.
Dept. 9, 4640 West Harrison St., Chicago 44, Ill.

TEN YEAR GUARANTEE STAMPED IN STEEL

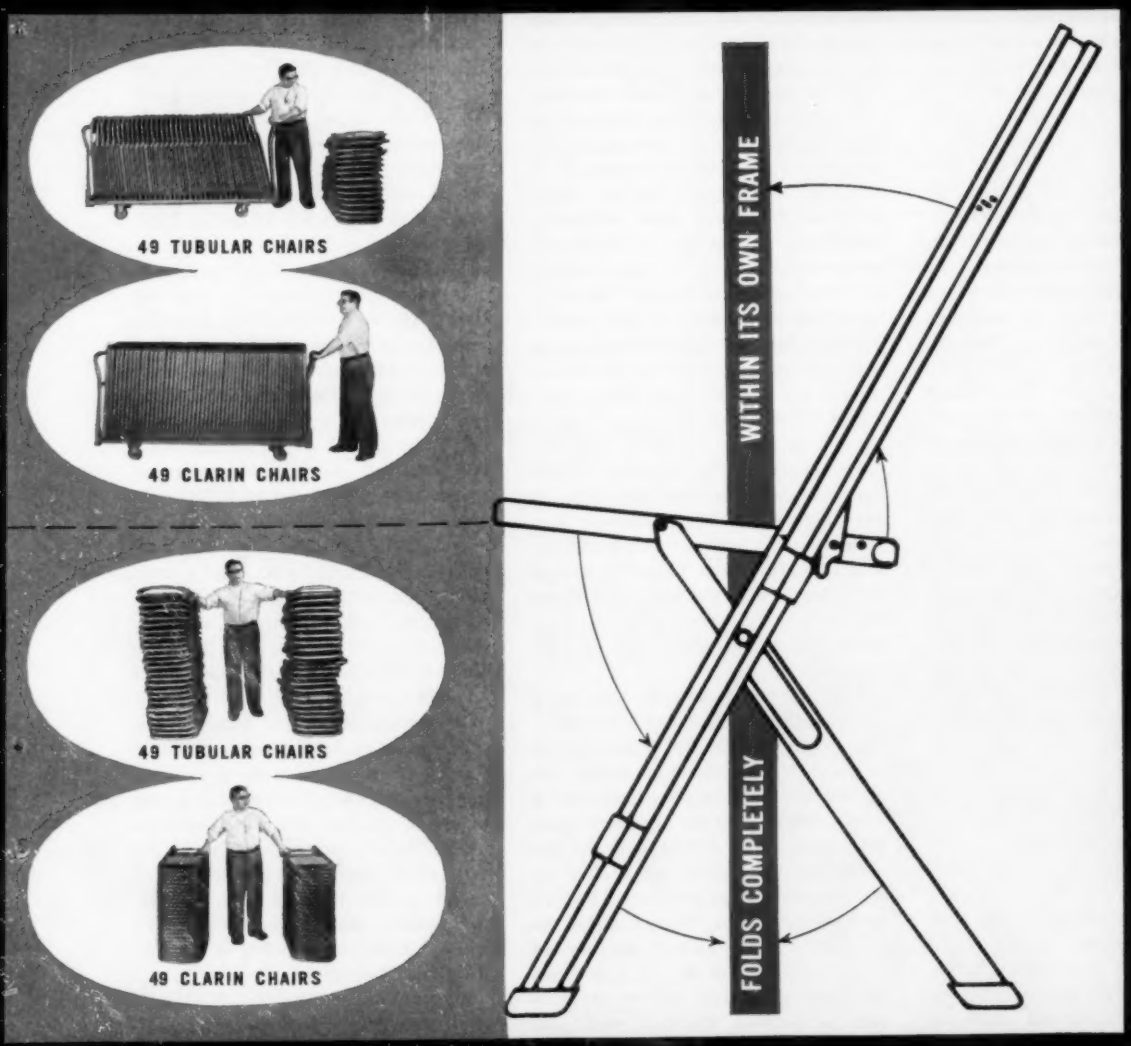
With complete confidence in the inherent quality of *Clarin* chairs, plus our 30 years of specialized product "know how", we take pride in issuing an unrivalled *10-year Guarantee* with every chair sold. The tangible sign of long-term economy is the date stamped in one leg of each *Clarin* chair. It is permanent assurance to all that you purchased the best.

Illustrated is Clarin No. 318-W . . . another comfortable folding chair among 65 models in the only complete line. You'll find a Clarin chair just right for your purpose.

QUALITY IS THE ONLY TRUE ECONOMY... AND Clarin SINCE 1925 QUALITY

SPACE...REDUCE HANDLING COSTS

Flip—and a CLARIN Chair is folded flat within its own frame . . . back, legs, seat and folding mechanism . . . nothing protrudes to waste expensive storage space. Designed to stack flat and level—can be safely stacked without wobbling as high as you can reach.



Actual photographs above clearly show that you save 30-40% of handling equipment costs and storage space by using CLARIN folding chairs.

SETS NEW STANDARDS FOR SEATING

(Continued from page 24)

THOUSANDS OF SCHOOLMEN, A HANDFUL OF ARCHITECTS

Along with 10 or 15 thousand others — who can be precise in such a mob? — we went to Atlantic City in mid-February for the American Association of School Administrators' 1956 convention. We've been to most of these superintendents' conclaves in recent years, but this time we returned with different impressions.

It's hard to know exactly why this was so, harder even than to cover adequately the multifarious goings-on. Like its predecessors, the convention lasted six days and consisted of: (1) eight general sessions for speechifying, business, award presentation and, at the eighth, entertainment (this year, Fred Waring and the Pennsylvanians); (2) work sessions or discussion groups, as many as 24 running concurrently on each of four consecutive afternoons; (3) clinic sessions (no speeches, just audience questions to a panel) for one solid morning; (4) concurrent meetings of some 13 allied educational organizations; (5) innumerable meetings of special groups and associations; (6) a whopping big exhibition of materials, equipment and techniques — everything that could conceivably be sold to further education's aims, from pencils to textbooks, school buses and, bulking very large in these days of school-housing shortage, building materials; and (7) a tremendous show of school buildings recently built.

A number of architects always attend, many discreetly shepherding clients, many exhibiting in the school buildings show, and always nearly 100 per cent of the 14-man A.I.A. Committee on School Buildings, which holds long business sessions. Both schoolmen and architects come from every corner of the U. S. and from neighboring countries; of course the schoolmen (mostly superintendents, some principals and teachers, a few lay school board members) greatly outnumber the architects. The educators are there as professionals. They not only listen to high-falutin' speeches that usually fade from the memory with unremarkable ease; they also participate, earnestly, often saltily, occasionally eloquently, in serious discussion sessions that at times make A.I.A. seminars seem superficial and at other times make the non-educator wonder if all this private language has even an esoteric meaning.

A carnival atmosphere, enhanced by competing displays and giveaways ranging from free pencils and reams of advertising "literature" (this for *educators!*) to fluorescent pink yardsticks, prevails throughout the vast exhibit that covers two floors of the huge Atlantic City Auditorium. In decided contrast is the serious atmosphere of the discussion meetings held incongruously in ornate hotel ballrooms up and down the boardwalk as well as in bleak auditorium committee rooms. Earth-shaking conclusions are seldom, if ever, reached in these discussions; not all the schoolmen always stay more sober than the architects; but the discussions nearly uniformly provoke thorough, even heated, participation from the floor. These are people dedicated to high purpose and it shows despite their quite normal human tendencies. To do less than one's best for them — well —

The respect the educators generally tendered the architects was impressive. The architects controlled or participated in not only the architectural exhibit but also several important sessions: one on school design; one on classroom planning; another on getting more for the school building dollar; and a clinic on special construction problems. The first, on building design, was presented entirely by architects, all of them current or past members of the A.I.A.'s school buildings committee. It drew an audience of between 800 and 1000. One architect spoke on educational requirements, another on the responsibilities of the individuals and agencies involved in designing and building schools, and a slide showing of first-rate schools all over the country demonstrated results obtainable. The coy concept of these "3 R's" of School Planning proved too much for the speakers; they became rather elephantinely playful and tossed around ponderous private architectural and personal jokes, thus proving that not only educators could be esoteric. Between thudding wisecracks there were occasional valuable statements, tellingly put. At the end, when the time came for the audience to participate, not one single word was uttered from the floor. Architecture fared better at the session on classroom planning, where educators and one lone architect formed the platform brigade. Audio-visual education extremists, who infiltrated many of the discussions, here had one of their main chances and spoke up vigorously. John McLeod, A.I.A., spoke quietly and reasonably in rebuttal; but it remained for G. E. Rast, a school superintendent from Connecticut, to delineate excitingly some of the educational potentialities likely to shape future classroom design, and for Charles Granger, A.I.A., and a couple of other superintendents, all speaking from the floor, to make the most challenging, telling statements. The session on construction economy found John Lyon Reid, F.A.I.A., at his best in a verbal free-for-all.

The architectural exhibit was, as we have said, huge. There were 508 mounts, and another 200 or so were received too late for hanging. A jury of six, half architects and half educators, was supposed to screen those that arrived in time, accepting examples deemed worthy and rejecting the low in quality. The jury had too little time for so great a task; perhaps this rather than lack of intestinal fortitude was the reason so many banal schools diluted the show. Also, the architectural display was so located that one had to hunt it all through the commercial exhibits; it was hung against tired drapes under impossible lights; it showed no organization in its arrangement. Among the schools exhibited were numerous excellent individual jobs and a quantity of buildings from New York City which, though none alone showed superb quality, made obvious the positive benefits accruing from that city's recently inaugurated policy of employing private architects.

We have implied that we left Atlantic City with mixed feelings. The architects, we felt, had muffed their one big opportunity, the discussion meeting on school architecture. They spoke up at others with, generally speaking, less strength than the respect accorded them led one to anticipate. Whatever the reasons, whether they liked it or not, the architects were at least partly responsible for the architectural exhibition's quality. Perhaps that, in sum, *was* the best the architects were capable of. We don't think so. — *Frank G. Lopez, A.I.A.*

(More news on page 32)

New way to specify roof insulation

Use new conductance figures —	Not obsolete inch thickness spec.
"C" value	"Nominal" thickness
0.36	1"
0.24	1½"
0.19	2"
0.15	2½"
0.12	3"

Recently, the U.S. Department of Commerce recommended that roof insulation be manufactured to specific thermal conductances, rather than inch thicknesses. Under this new simplified practice method, architects will specify performance rather than thickness. Contractor, manufacturer, and roofer will be clearly aware of the thermal standard the insulation must meet, and misunderstandings will be avoided.

You get guaranteed conductance with Armstrong "Certified" Temlok Roof Insulation

The insulation value of each thickness of Armstrong "Certified" Temlok is guaranteed to equal or exceed the corresponding conductance figure in the left-hand column of the table. "Certified" Temlok is available in both plain and asphalt-impregnated types. This low-cost, accurately cut roof insulation is made of tough pine fibers that give the boards high insulation value and unusual strength.

Temlok is easy to handle on the job, withstands rough treatment, and provides a firm base for built-up roofing. Precision-cut edges assure heat-tight joints.

When you specify "Certified" Temlok Roof Insulation, you determine the insulation conductance needed to meet the design requirements of the roof. This conductance figure, or "C" value*, is the figure you enter in your specification. There's no need to convert to inches. Armstrong "Certified" Temlok Roof Insulation with a "C" value that equals or exceeds the job requirements will be shipped.

For complete information on Armstrong "Certified" Temlok Roof Insulation, call the Armstrong office nearest you or write today to Armstrong Cork Company, 3804 Rock Street, Lancaster, Pennsylvania.

* *The amount of Btu's that pass through a sq. ft. of material per degree of F. temperature difference at 75° mean temperature.*

The high strength of Armstrong Temlok Roof Insulation means better workmanship on the job. Edges stay sharp for tight joints. Little pitch is absorbed by the boards, so insulating efficiency remains high.

Armstrong

ROOF INSULATIONS

CORKBOARD TEMLOK® ASPHALT-IMPREGNATED TEMLOK

Three for the Money

. . . PROFIT-MAKING DOW PLASTICS

All through your homes, you'll add real value with Styron tile. It's a blessing in the kitchen . . . splashes wipe clean in a whisk.

1 *Guaranteed Plastic Wall Tile Made of Styron Gives Your Homes the Luxury Look*

More people want plastic wall tile in their homes than ever before. And when you install Styron® plastic wall tile, you give them the luxury look they want, plus the satisfying assurance of guaranteed quality!

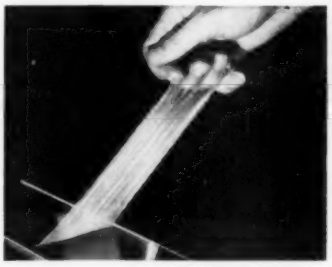
Home-buying prospects will appreciate the tasteful practicality of Styron tiles, the way they clean so easily, keep a new home looking new for years. Styron advertising has told all America of the guarantee program, too. A home that features Styron plastic wall tile will sell faster because customers know that tile, mastic and installation are *guaranteed* to conform to NBS and FHA standards of quality.

Get in touch with a certified dealer today . . . give your homes the luxury look of guaranteed Styron plastic wall tile. It's the year's most exciting—and profitable—sales clincher!

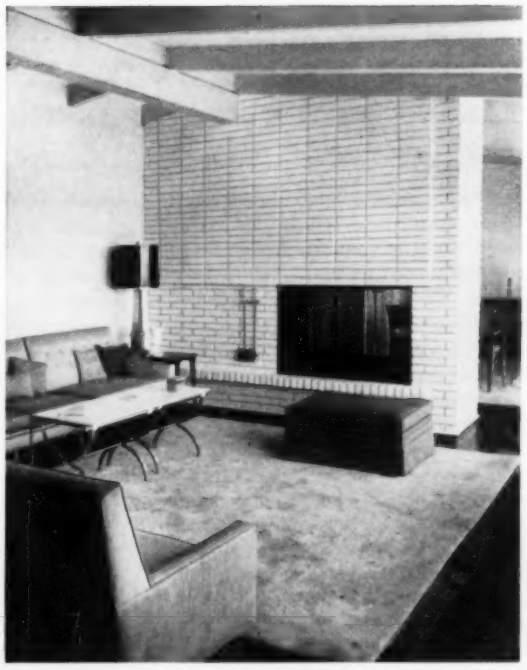
In regular and king size squares (top of page) and brick shapes (above), Styron tile comes in a wider range of decorator colors. It's perfect for bathroom, laundry, recreation room, nursery and utility room, too.

2 *easy-to-apply latex paints speed work schedules . . . offer a bonus in beauty and easy upkeep*

No wonder latex paints are first in the finish of America's finest homes! Architects and builders benefit by their ease of application, fast drying and quick clean-up . . . which add up to important time and labor savings and keep work schedules up-to-the-minute. Home buyers want the extra beauty, durability and easy upkeep that go with a latex-painted home. Switch to latex paints for a profit-making performance every time.

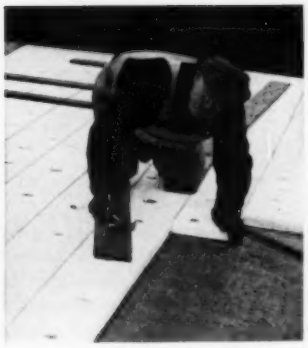


Latex paints dry to a tough, scrubbable film that resists acids, alkalies and greases.



House & Garden chose latex paints for the 1955 House of Ideas.

As a perimeter insulation, Styrofoam is used both vertically and horizontally.



Styrofoam insulation tops the roof decks of flat, shed or butterfly roofs.

3 *lifetime Styrofoam insulation lowers installation costs . . . boosts efficiency*

Now you can add a lifetime of comfort in every home you insulate . . . with Styrofoam® (a Dow plastic foam). Styrofoam won its fame in the low-temperature insulation field and is now available for home construction, bringing dividends in lower installation costs and reduced fuel bills. Styrofoam is clean, easy to handle, feather light, yet structurally strong. It lasts a lifetime because it resists moisture, rot, mold and deterioration. Vermin won't touch it. Styrofoam is the big news in home insulation . . . make it pay off for you! THE DOW CHEMICAL COMPANY, Dept. PL418L, Midland, Michigan.

you can depend on DOW PLASTICS DOW

TAKING STOCK: THE PRESIDENT'S PUBLIC WORKS COORDINATOR

Some eight months ago President Eisenhower decided to follow the recommendations of certain Congressional committees and set up a Coordinator of Public Works directly under his own supervision. He selected for the position Maj.-Gen. John S. Bragdon (USA ret.), a former deputy chief in the Army Corps of Engineers and one of the President's West Point classmates.

For a brief period previous to this announcement, General Bragdon had been studying the broad public works field as an executive within the Council of Economic Advisers. This early work included a start on the accumulation of new data on all types of public works activity — Federal, state and local.

Sufficient time now has passed for the immediate and long-range plans and programs of this office to be outlined with some clarity. The architect and engineer will have a significant function in the development of these activities, both in the planning of projects and in their responsibilities to local communities in the field of program coordination.

Long-Range Programming Sought

With a small staff assisting him (only 14, half of them in administrative capacities) General Bragdon divides his task into two broad phases: first, "acceleration planning" and second, long-range planning for which the first phase provides a framework. Only now is the office getting into details of the future picture of public works preparation, a study General Bragdon has felt should run concurrently with and be a proper part of the acceleration work.

He would like to see, and will urge through every facility at hand, a longer span of programming public works, particularly at state and local levels. All the pieces of public works development could, of course, be fitted together more easily if state and local authorities projected their schemes well into future years, programming perhaps on a 20-year basis.

First Goal: Survey of Needs

The first objective of the Bragdon staff is to ascertain needs in all public works fields. In the collection of these figures no precise time limits are prescribed; only a "reasonable" time is considered. The figures are made as realistic as possible through close attention to ability to finance and a true definition of requirement in view of future development. This is sometimes difficult to pinpoint in the smaller communities where operations so frequently are on a year-or-two basis.

"Methodology" and "Urgencies"

Secondly, General Bragdon is working on methodology in the listing of public works needs and plans. The former and present methods of accumulating data have been under intense study and he will seek new ways to improve them.

A third and most important study of the coordinating office is "relative urgencies." General Bragdon would not predict when his staff might finally define such priorities but much of the work in this fairly new executive department endeavor looks toward a definition of project urgency in terms of giving employment where needed most and filling voids in the nation's public works pattern.

From these "relative urgencies," long-range plans will be developed. A time limit will be placed on this part of the program — probably a 20-year span. Here there will be some effort to place dollar values on projects but this will be approximate, with the emphasis on where the project fits best into the overall public works picture for the next two decades.

Regional Setup Planned

But before the functional priorities are established, there will be a regional division of the country to get the plans closer to the local level. General Bragdon feels there can be no action as long as coordination is held exclusively at the national level. At the regional phase we will move into priorities, he said.

Some indication of the gigantic task facing this coordinator and his aides can be found in the mere consideration of the broad field in which they work. The operations of 109,000 individual Federal, state and local government agencies must be scrutinized and brought into focus. The efforts so far have convinced General Bragdon of a great lack of coordinated planning. This is evident at all governmental levels but grows as the studies go down through state to county and local activities.

In collecting data on what public works already are planned, designed, and started, a questionnaire system has been used for securing state and local information. This now is in and analysed for 1954. A second survey will be made starting in July of this year. It is hoped this biennial effort can be made annual to keep the data current.

The state and local replies list number of projects within selected groups and estimate dollar value. To put it on a project-only basis would make it more difficult to keep the listings current, General Bragdon said. Federal data is handled by project only and is strictly an annual cataloging of jobs. It is, of course, much easier to obtain in detail than is the state and local work.

Advisers Will Participate

An advisory committee of 10 Federal agency executives, those most concerned with public works construction among the 40-odd having some activity in the field, meet with General Bragdon about once every five weeks. There now have been three sessions of this group at which aims of the office are outlined and the problems of handling Federal data are discussed.

A second advisory committee on state and local matters is to be formed, with four Federal representatives and 11 non-Federal persons in its membership.

Because of its small operating staff, the Bragdon office is going outside government for assistance in developing its program. Problems are formulated in summary form and presented to private firms that develop research details from them. The office compensates for this, then tries to interest research organizations and foundations in supporting a broader study of the problem from which the office itself will come up with an end-product decision.

Outside Research Utilized

The first problem to be so handled was that of methodology — the way of determining need. Other subjects being processed include the role of public works in the economy, the interrelationship of state and local governments in financing public works, and a general

(Continued on page 366)

(More news on page 36)

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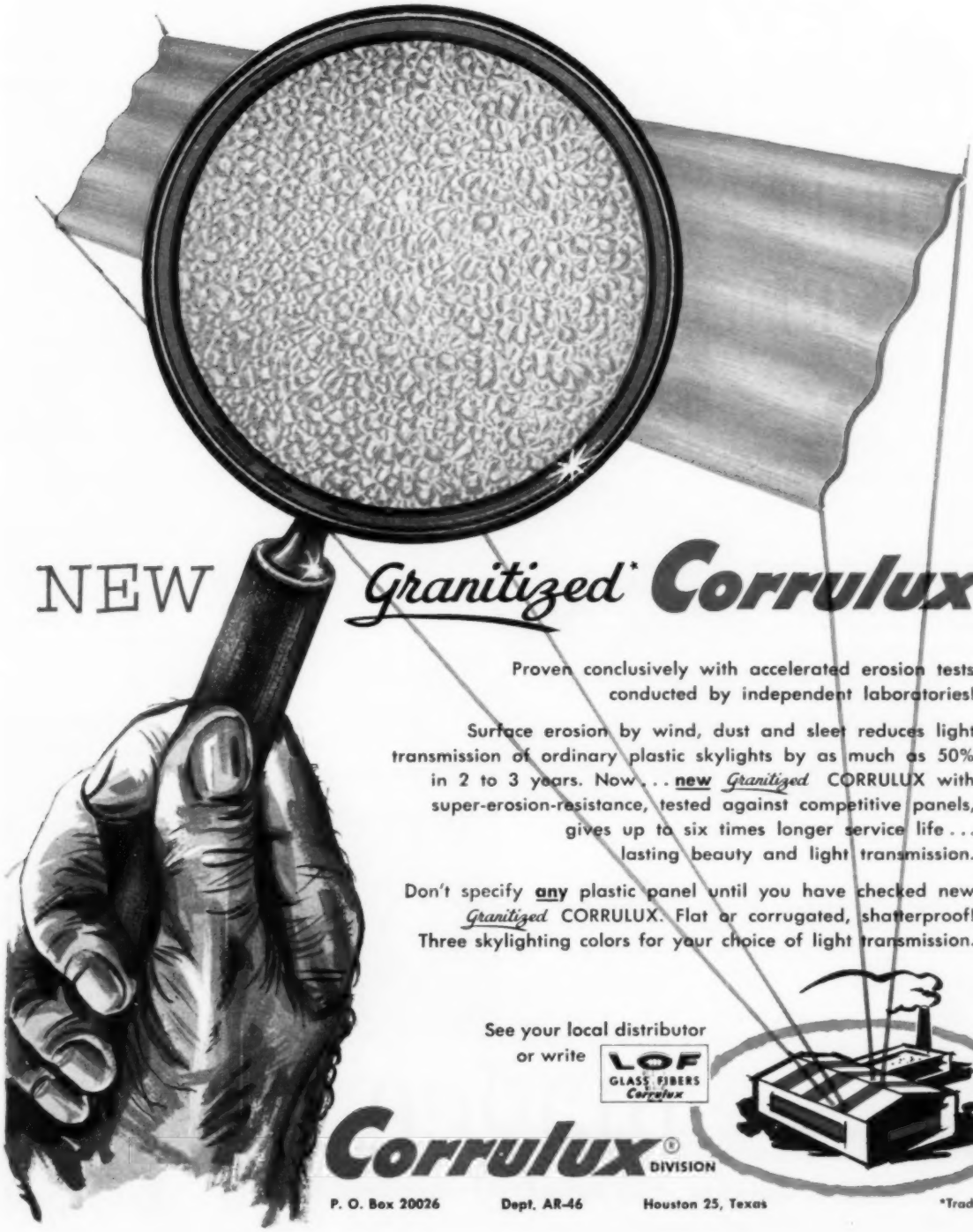

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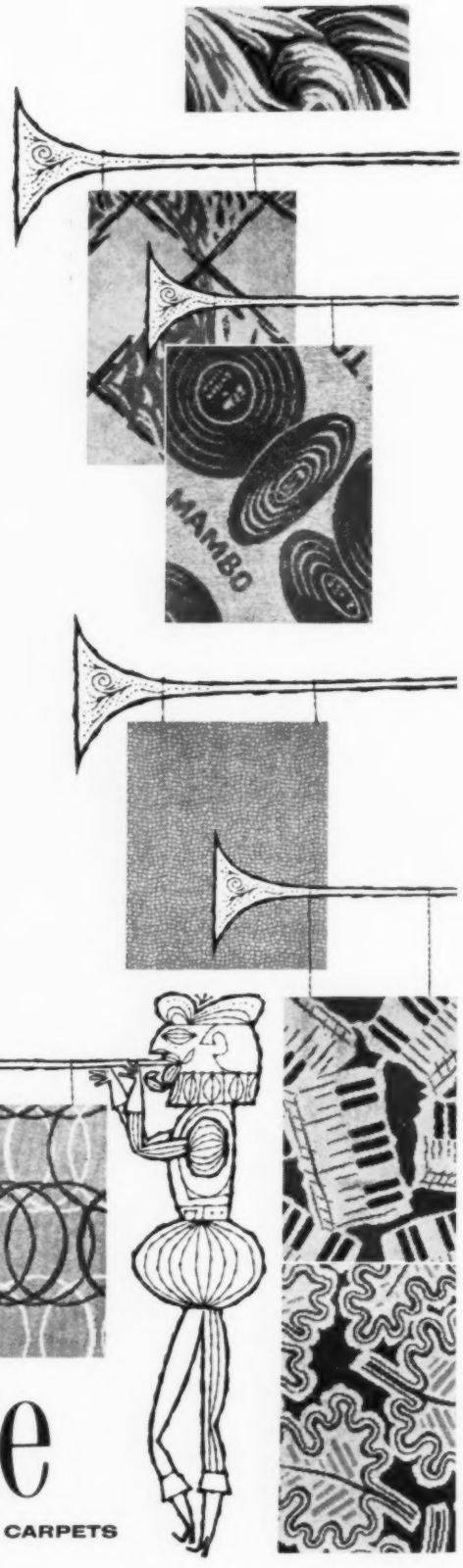

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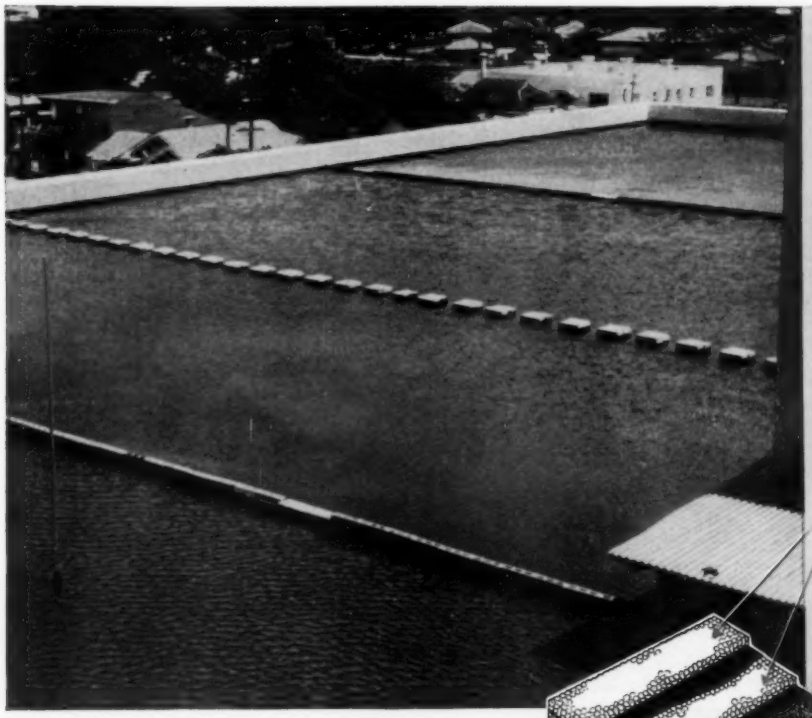

THIS KOPPERS Water-Cooled Roof protects Sears, Roebuck's store in Honolulu, Hawaii. It is covered by six inches of water at all times and "works with" the air-conditioning system to keep the store cool.

ARCHITECT:
Wood, Weed & Associates, A.I.A., Honolulu, T. H.

ROOFER:
J. Russell Hudson Roofing Company, Honolulu, T. H.

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Recently, Sears, Roebuck and Co. had a Koppers Water-Cooled Roof installed on its store in Honolulu. This roof is providing excellent protection and is helping to keep the store cool.

But there was a problem.

Due to climatic conditions in Hawaii, the water was a potential breeding ground for mosquitoes. So, tens of thousands of hungry guppies and mosquito fish were dumped into the water on the roof. These fish are now in a piscatorial paradise, and the mosquitoes are a menace no longer.

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QUEBEC ARCHITECTS HOLD THEIR 65TH ANNUAL CONVENTION

Better public relations was the burden of the presidential address delivered by Edward J. Turcotte at the 65th annual meeting of the Province of Quebec Association of Architects. Mr. Turcotte urged the adoption of an aggressive program of public education. "People are very, very badly informed with respect to the architectural profession," he said, and added that he would like to see the press give the same prominence to architects that it gives to other artists.

The three-day meeting opened on January 26 at the Chateau Frontenac with a business session in the afternoon and a "vin d'honneur" in the evening to mark the opening of an exhibition of winners in the Massey Medals Competition and the Vancouver Civic Auditorium Competition.

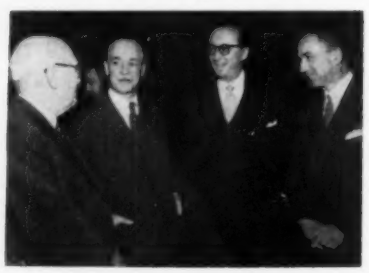
On the second day, following another business session, architect Edouard Fiset led a seminar at which Quebec laywer Camil Noel, C.R., spoke on "The Law and the Architect." Lucien Mainguy, a past president of the

(*Continued on page 40*)

Above, left: delegates and guests at the final luncheon of the Province of Quebec Association of Architects' annual meeting. Above, right: at the reception for the Association's new council, Msgr. Maurice Roy, Archbishop of Quebec and Primate of Canada, E. J. Turcotte, retiring president of the P.Q.A.A., and Msgr. Alphonse Marie Parent, rector of Laval University, greet A. Turner Bone, president of the Canadian Construction Association, R. F. Leggett, director of the National Research Council's Division of Building Research, and Camil Noel, a Quebec lawyer participating in the meeting

Above, left: Henri Mercier, new P.Q.A.A. president (center), with Cecil McDougall of Montreal and Oscar Boilé of Quebec City, who both received the Royal Architectural Institute of Canada's Medal of Merit for distinguished service to the profession. Above, right: new officers of the P.Q.A.A., at the "vin d'honneur," include Gérard Venne, second vice president; Lucien Mainguy, past president; E. J. Turcotte, immediate past president; H. A. I. Valentine, first vice president; Mr. Mercier; and Randolph C. Betts, honorary secretary. Georges de Varennes, honorary treasurer, is not in picture

At the Council Reception: A. J. C. Paine, president of the R.A.I.C., with Mr. Bone, Mr. Noel and Mr. Leggett



Mr. Turcotte with Mayor Wilfrid Hamel of Quebec City, who opened the exhibit of Massey Medal winners

Edouard Fiset, convention chairman, with Bernard M. Deschenes, P.Q.A.A. executive secretary, and Mr. Mercier

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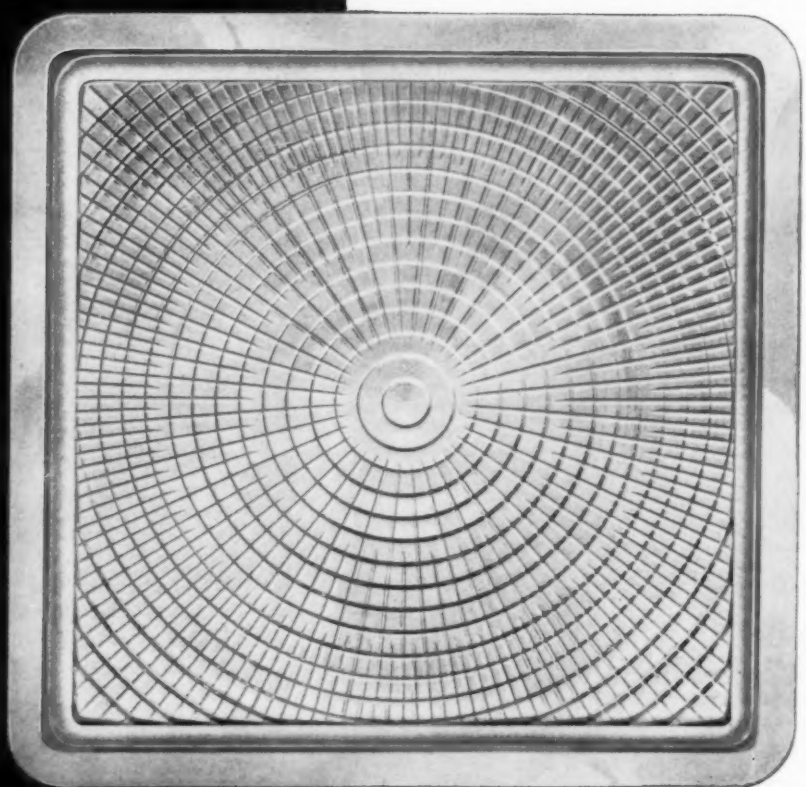

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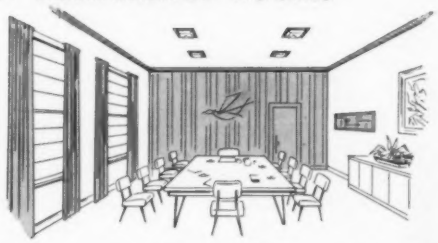

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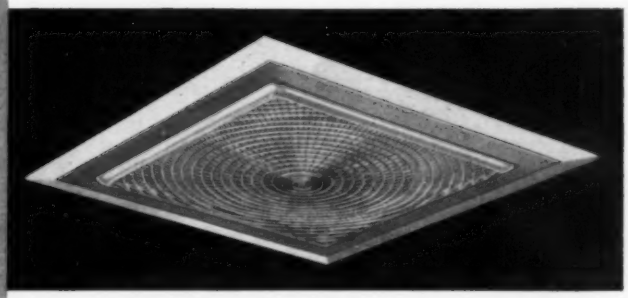
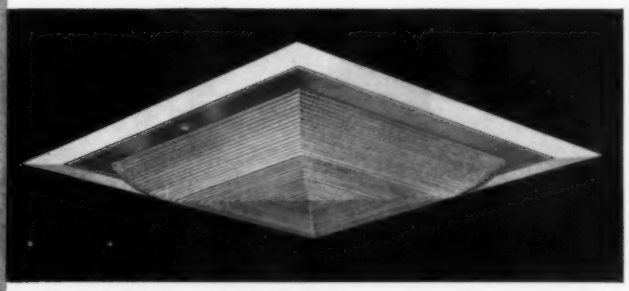
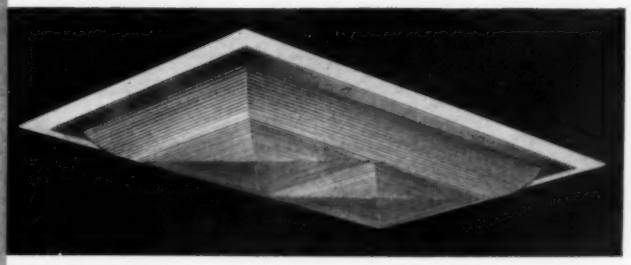
TYPES of recessed ELIPTISQUARES



Recessed Flush Eliptisquare—Four eliptisquare sizes accommodate 6½", 8½", 10⅜" and 12" AMCOLENSES. The eliptisquare reflector multiplies light output.



Deep Eliptisquare—Three sizes utilize 8½", 10⅜" and 12" AMCOLENSES.



Two Light Eliptisquare—Accommodates one 9½" x 16½" AMCOLENS which incorporates two symmetric lens elements each with its own lamp and eliptisquare reflector. All eliptisquare units have separate hinged doors which rotate open on two spring pin hinges.

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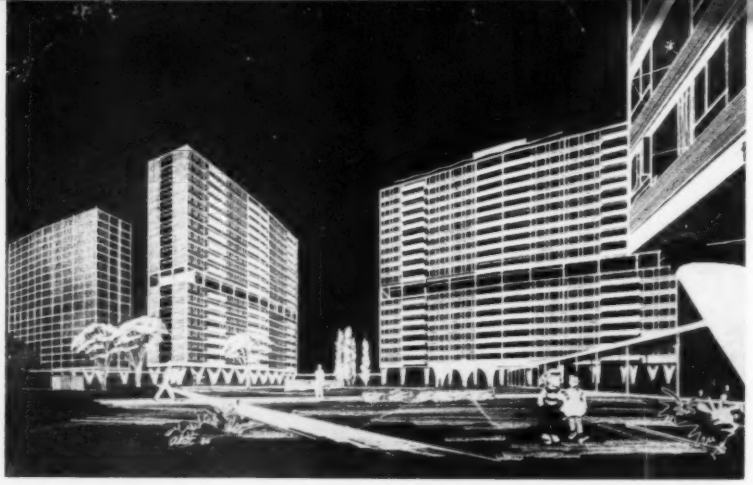
THE RECORD REPORTS

NEWS FROM CANADA

(*Continued from page 36*)

P.Q.A.A., discussed "The Duties and Obligations of the Architect," and urged that architects give enough detail in their preliminary drawings and specifications to permit accurate estimates.

A. J. C. Paine, president of the Royal Architectural Institute of Canada, at the same session advocated greater use of official contract documents.



A $21 million redevelopment project has been proposed for Toronto. To be composed of six 19-story apartment buildings, it was designed by Weir, Cripps and Associates, Toronto

On Saturday, the last day of the convention, the architects toured the city but returned to the hotel in time to hear the chief speaker, Msgr. Alphonse Marie Parent, rector of Laval University, at the annual luncheon. Monsignor Parent called for greater concentration on the liberal studies in universities, but said that before this could be done universities would have to put in order their faculties in the speculative sciences, liberal arts, "pictorial" arts and "moral sciences."

Delegates elected Henri Mercier, a Fellow of the Royal Architectural Institute of Canada and member of the Montreal firm of Crevier, Lemieux & Mercier, to the presidency. Other new officers include: H. A. I. Valentine, Montreal — first vice president; Gérard Venne, Quebec — second vice president; Randolph C. Betts, Montreal — honorary secretary; Georges de Varrennes, Montreal — honorary treasurer; and Richard E. Bolton, Francis J. Nobbs, C. Davis Goodman, Pierre Morency, Paul E. Brassard, Chrystie L. Douglas, Robert P. Fleming, Paul O. Trepanier, Edouard Fiset and Lucien Mainguy — members of the Council.

PROVINCIAL OFFICERS NAMED AT B.C. ARCHITECTS MEETING

At the 36th annual meeting of the Architectural Institute of British Columbia, held recently in Vancouver, J. L. Davies was reelected president. Clive D. Campbell, deputy minister of public works and chief architect for the provincial government, was elected vice president. Councillors include Prof. Fred B. Lasserre, Murray Polson, C. E. Pratt, Keith B. Davison and R. W. Siddall.

(*Continued on page 44*)

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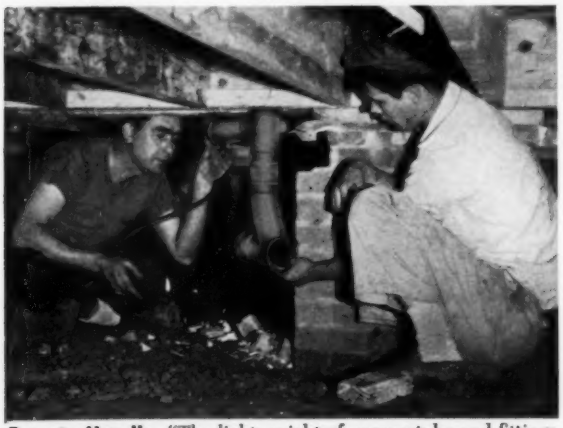

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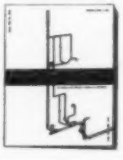

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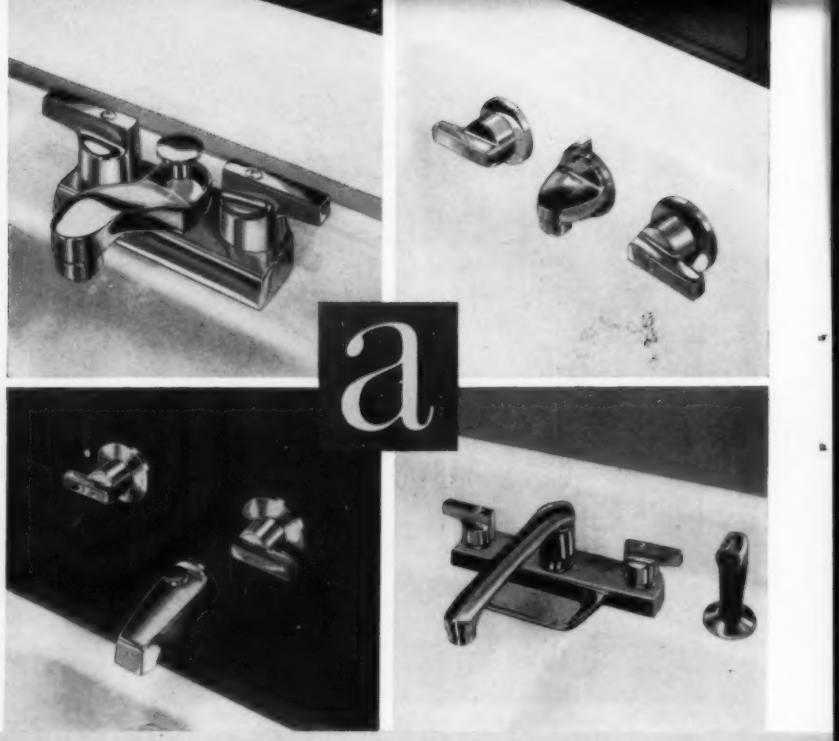

Picture studies in function and

c **Combination Lavatory and Vanity Shelf.** This smart-looking one-piece Guestledge lavatory-counter combination is especially suitable for use in hotel or motel baths. It's a notable space-saver, since the toilet in the bathroom can be so positioned as to serve as a dressing table seat. Of genuine vitreous china with non-tarnishing Chromard fittings, the Guestledge is low on maintenance, high on guest appeal.

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THE RECORD REPORTS

NEWS FROM CANADA

(*Continued from page 40*)

FEAR U. S. COMPETITION FOR CANADIAN ENGINEERS

At its Toronto hearing, the Royal Commission on Canada's Economic Prospects was told by J. M. Thompson, vice president of Canadian Westinghouse Ltd. that modifications in U. S. requirements for military service may aggravate Canada's shortage of graduate engineers and technicians. Such changes in the draft law will increase the attractiveness of employment in the U. S. for young Canadian engineers, he said.

Fort Harrison Apartments, Victoria, B. C., contains 11 one-bedroom units, six of them with full balconies; Clack, Clayton, Pickstone, of Victoria, are the architects

The Westinghouse executive was one of many speakers who stressed the gravity of the shortage of skilled personnel. The implication was that unless this shortage is remedied, Canada's prospects for the next 25 years are going to suffer a severe setback.

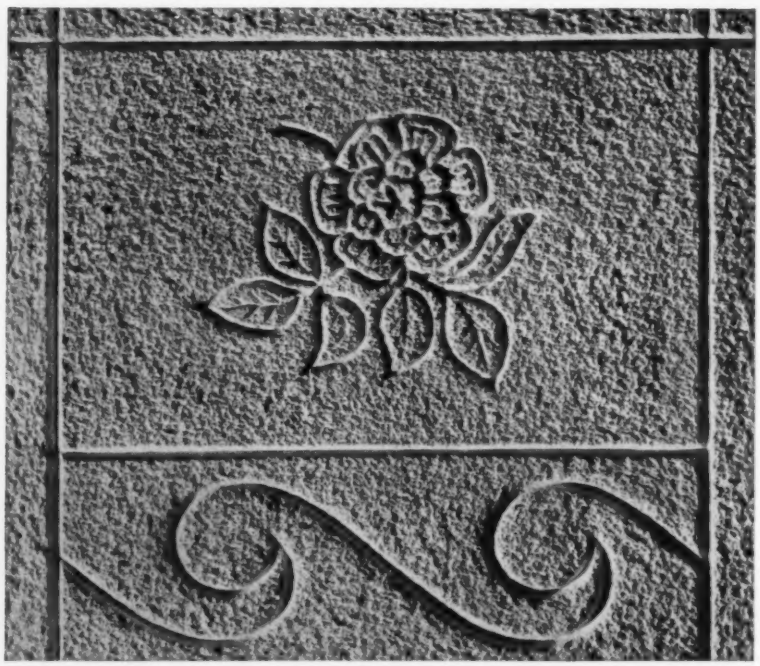
H. M. Turner, chairman of the board of Canadian General Electric Co. Ltd., had some statistics for the situation. Against an expected 1800 engineering graduates in 1956, there is an annual need of 2500 to 3000 a year. There must be new facilities for training engineers, he said, or greater use made of existing facilities. He suggested also that Canadian universities study the American practice of dividing university classes into two groups, one group working in industry half the year while the other group is studying.

McGILL EXPERIMENTS WITH ARCHITECTURAL EDUCATION

For the past two years, the McGill School of Architecture and the Ecole des Beaux Arts of Montreal have been cooperating, under the title Laboratoire d'Etude Technico-Architecture, in a new method of instruction for architectural students. The system calls for the students to construct in the laboratory key sections of a full-scale building, using the same materials as would be used in actual construction.

The technique, which is also receiving support from the Montreal Building Trades Center, was initiated by Chicago architect Howard Fisher at the invita-

(*Continued on page 46*)



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THE RECORD REPORTS

NEWS FROM CANADA

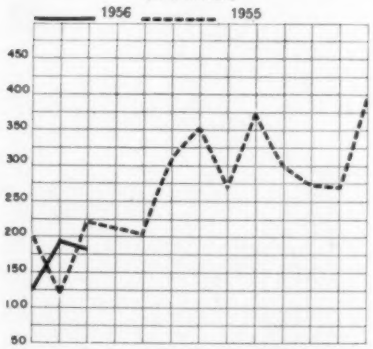
(Continued from page 44)

tion of interested building groups in Montreal. The point of the system, according to Mr. Fisher, is to give the student "a detached view of the product of his own imagination while he still has a chance to improve upon it."

NEWS NOTES

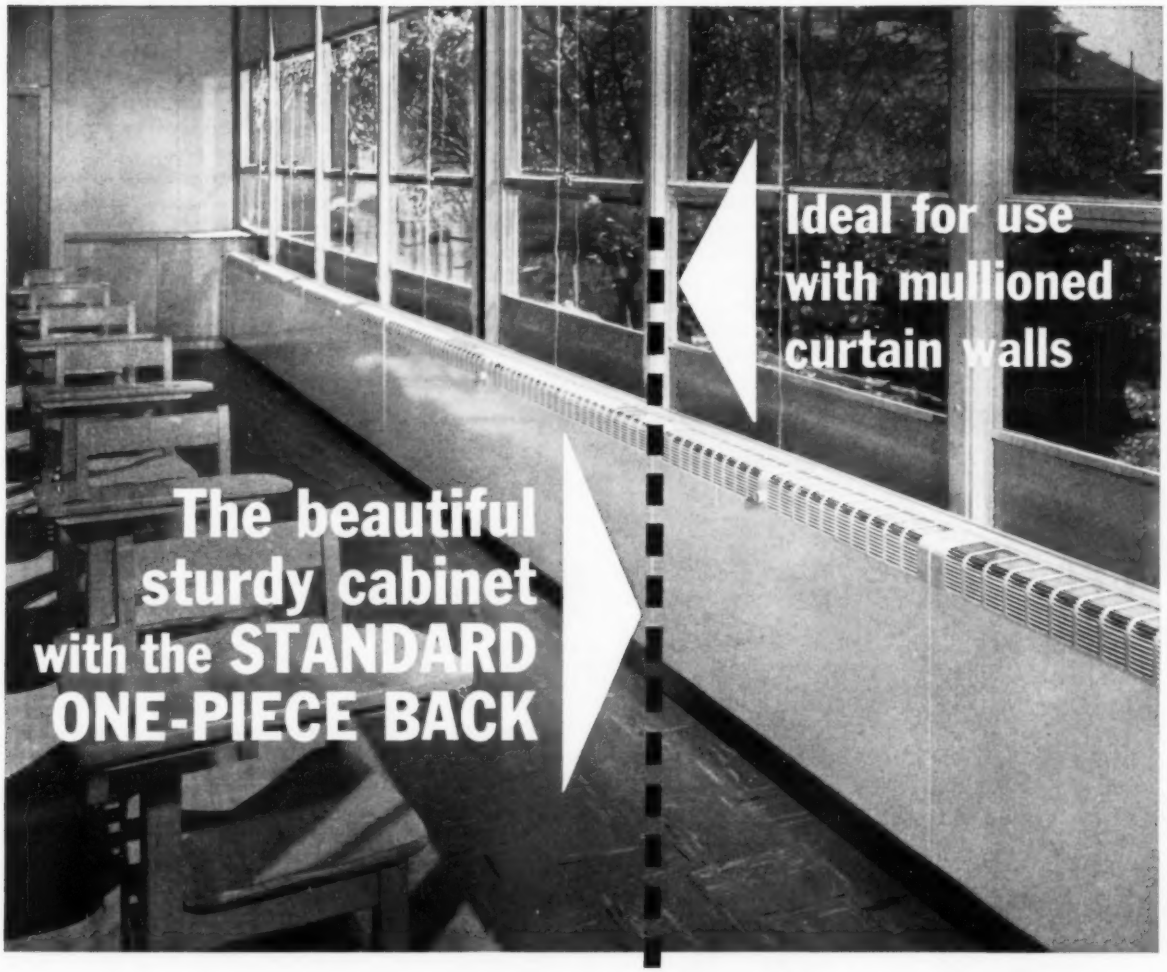
The Division of Town & Regional Planning, a new department at the School of Architecture, University of Toronto, has appointed Prof. Gordon Stephenson its head; Mr. Stephenson has for the past two years been consultant to the government of Western Australia in preparing regional plans for the metropolitan area of Perth and Fremantle. . . . **The Professional Engineers' Medal** was awarded this year to Richard L. Hearn, chairman of the Ontario Hydro Electric Power Commission; the recipient was honored for his contribution to Canadian engineering as a hydraulics authority and for his more recent activities in atomic energy. . . . **A new office** for the practice of architecture has been opened by C. A. McCool, formerly district architect for the Federal Department of Public Works, at 460 Main St., Winnipeg. . . . **A new partnership,** Durnford, Bolton, Chadwick & Ellwood, has been formed by architects A. T. Galt Durnford, Richard E. Bolton, R. V. Chadwick and Michael G. C. Ellwood, with H. L. Fetherstonhaugh as consultant and J. K. Nesbitt as general manager; offices at 1980 Sherbrooke St. West, Montreal.

Contracts Awarded: Comparative Figures*
(in $ million)



*Compiled by the editor and staff of *The Building Reporter*, from information collected by MacLean Building Reports

(More news on page 48)



"Let there be light!" say the occupants of today's offices, schools, hospitals . . . "Let there be speed and economy!" say today's builders. So, we have prefab window walls.

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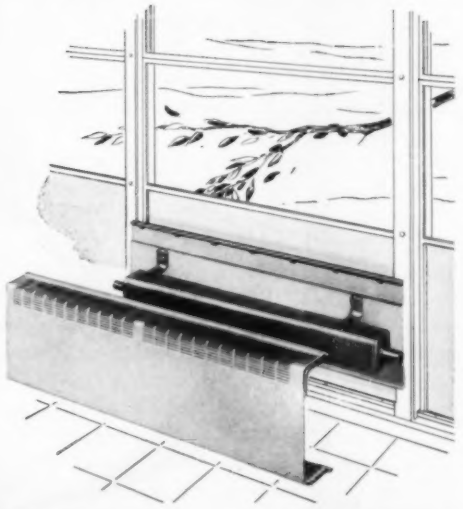

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FHA PROPOSES EXPANSION OF STANDARDS PROGRAMS

The Federal Housing Administration has come to the conclusion that it is dragging its feet in the field of building technology and has proposed a program to encourage research in areas which affect its interests. It seeks additional funds from Congress with which to assure that FHA will not be a "roadblock in the path of progress," as Commissioner Norman P. Mason characterized the situation when he appeared before a House Appropriations subcommittee.

Here is his testimony on the subject:

"We sat down with representatives of the industry, of the Building Research Advisory Board, of the National Bureau of Standards, the Forest Products Laboratory, the Veterans' Administration and the other housing agencies.

"We found that industry was doing a good job of new product development but that we were not able to keep up with the advancing technology in the adjustment of our construction standards.

"FHA cannot let itself be a roadblock in the path of progress in building technology. Neither, on the other hand, can we permit inadequately tested or untried methods of construction at the risk of the government on its mortgage insurance contracts and at the risk of the homeowning public.

"We recognized that we had to improve our ability to act promptly in evaluating new materials and methods of construction and in issuing standards which the industry at large can follow in their manufacture and use.

"At the same time we found that there were some areas of building technology which are being neglected. These are areas outside the field of new product development, in which the questions involve combinations of products or variations and improvements in established construction methods. In such cases, no one manufacturer is in a position to perform or pay for the necessary testing and evaluation. It was recognized that under these latter circumstances FHA would have to pay for some or all of the testing needed. As a result a program was developed to meet this need.

"Under this program FHA and other government agencies would work together with industry. Industry will provide all the data which it has at its disposal concerning its products.

"Where the question involves the testing of a new product by a given industry, industry will continue to pay for the tests and supply all of the material to FHA for evaluation. FHA will have to improve its facilities to act on this data promptly and issue standards for the industry to follow. These standards will be made available to the Veterans Administration, other interested government agencies, the industry at large and the public.

"In cases involving combinations of materials or other circumstances which preclude assumption of the full burden by any member of the industry, industry will again supply the data at its disposal as will other government agencies and institutions in the building field, but

(Continued on page 398)

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ARCHITECTURAL RECORD

WESTERN SECTION

Western Editor:
ELISABETH KENDALL THOMPSON 2877 Shasta Rd., Berkeley 8, Calif.

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ARE WE HEADED FOR A BLACKOUT?

The theme which incited Portland architect Walter Gordon's guest editorial — the rarity of evidence of the esthetic quality in our buildings today — could well become the theme of penetrating study by the profession at large. In some Western areas architects have found that they cannot "live by bread alone" and there is honest searching for better understanding as basic to better design. But as Mr. Gordon indicates, there is plenty of reason — and opportunity — for more such thoughtful analysis.

Walter Gordon is the newly elected vice president of the Oregon chapter, A.I.A. Before opening his own office, he worked in the office of Pietro Belluschi in Portland, and had earlier been curator at the San Francisco Museum of Arts.

Your comments on this editorial are welcome on this page. Write to the Editor, Western Section, 2877 Shasta Road, Berkeley 8, Calif.

TRAVELING IS NOT ONLY broadening — it's enlightening, especially to the architect because buildings being immovable, he must go to them; and only by actually visiting buildings can he really know what his fellow architects, the great and the near great, the young and the old, are trying to do.

Sometimes the peripatetic architect becomes the Visiting Architect — a special guest of his fellows, imported to serve on a jury or make a speech. One of the pleasures of being a Visiting Architect is being taken on a tour of the New Work by a local architect. One climbs into the car gratefully, sensing from experience how long the ride will be. After driving through miles of pretty dreary architectural — or otherwise — errors, described as our "unfortunate heritage" there is the Important House, or the Important School building. Very nice, and sometimes exciting. But it takes a long rest period to recover from this: the exhibits are so rare and so inconveniently placed.

But sometimes you're on your own — a do-it-yourself tour. With a map beside you and a sense of uncertainty that causes tremendous traffic tie-ups, you look for the architectural gems — a procedure that requires great physical endurance and persistence but in the end offers a better chance for uninterrupted contemplation — *when* you find the gems.

Nevertheless, it does give a great lift to the morale to see the really good work, wherever you can find it. Architects point out the obvious fact that our cityscapes are getting shabbier by the minute, and yet the new work is hardly a reassurance against this. Most of it is uninspired, mediocre or worse. Surveying this background, there is a tendency to worry about the exceptional work and the architects who produced it. Suppose the three or four excellent buildings which are produced — however hard to find — failed to appear every year? Suppose by some tragic form of chain reaction in local design, dullness should lead to boredom and finally to the blackout?

By whatever miracle these exotic exhibits, so difficult to find, manage to get realized, it is this fine architecture which keeps the young architects trying and the older architects from dying spiritually. We must seek out the Good Work, play it up and cherish the architects who are responsible for it. These are the true leaders of the architectural profession. Who knows? If it someday became the practice to give the important civic jobs, the dominant structures, to only the ablest architects, in time these architects could transform our cities positively — and lift the spirits of *all* the people.

What do *you* think?

Walter Gordon

DIRECTION THROUGH SPACE

DESPITE THE TITLE, this is not the script for a TV space-travel feature. It is a discussion of where we architects are headed.

To set things in order, to give our surroundings a form that means something — this is the challenge for many of us. Recognizing and meeting all the forces acting on a building project and organizing them to form a solution of character — this is our duty.

I believe it was Belluschi who said that good architecture is convincing. By "convincing" I think he meant that good architecture has a power, and a look that "looks right" — a pattern consistent and strong. To put it simply:

> Does the house convince us — that it is a simple unaffected expression of how its owner and architect look on life? Does the school convince us — that it is arranged the way our children like it and the way that makes teaching a joy? Does the church convince us — that it symbolizes the highest aspirations of its congregation?

This judgment of a finished job is for the critic, but how can an architect steer his course to produce convincing architecture?

In *The Education of Henry Adams* I came across these words — not meant particularly for us, but they seem to apply:

"From cradle to grave this problem of running
order through chaos
direction through space
discipline through freedom
unity through multiplicity
has always been, and must always be, the task of education, as it is the moral of religious, philosophy, science, *art*, politics and economy."

Let me repeat this idea: the moral of art is order, direction, discipline, unity.

At about the same time that Adams, the world-traveler, wrote the above, Frank Lloyd Wright was speaking to women's clubs in the Midwest listing as the first of his "Propositions" of good architecture that buildings should have "simplicity and repose." By this he meant simplification of the problem and resolution of the forces in it: architecture in balance.

Wright went further, saying a few years later on:

> "To let individual elements shine at the expense of final repose is a betrayal of trust, for buildings are the background or framework for the human life within their walls and a foil for the nature efflorescence without."

Together, then, Adams and Wright seem agreed on order and unity, simplicity and repose. To some this may suggest a static outlook on art, although we will admit the work of Wright is not that. At any rate, I want to add another principle borrowed from Adams' remarks: *direction through space*. Here are the dynamics — direction, purpose, movement.

I'm sure that many of us believe that in the complicated world of 1956 the things that are most needed are a clear direction of aims and a renewal of self-confidence to act. As Robert Hutchins said in a recent lecture at the University of Washington, we don't need "freedom from" things but "freedom to do" things — a positive and creative attitude. There is a big space in which to act and what we must do, I think, is give strong direction to our action. In architecture this means organizing and analyzing the influences working on us, simplifying our designs, giving our buildings and neighborhoods a strong character — nothing hesitant, or trifling, or insincere. Our buildings must inspire people by looking as if they know where they're going — with strength, direction and order.

There has been considerable talk lately about a trend in our architecture — to decorate and color and elaborate: murals, mosaics, textures, and exciting colors. This is good and will have meaning provided what we decorate and color and elaborate on is sound and worthy. But it will never save a mediocre conception or convince Belluschi, for instance, when applied to the work of a faltering hand. Embellishment should be justified only for a basic structure created in accord with these principles enunciated by Adams and Wright.

What forms are widely used today to give order and meaning? They are simple forms — very appropriate for a troubled world. They are forms usually arrived at after some time of association with the problem — through a process of elimination of extraneous matter and shifting and hauling to get all elements to fall into some organic whole. This is discipline in the positive way — not the New England kind that "Father knows best" about. And the process of arriving at the box or cylinder or diamond or pyramid has been labored but also intuitive.

A careless or quick use of simple or geometric forms, without conviction or without resolution of all the

architectural problems, is one of our great dangers today. An art bulletin in 1950 listed "the underlying principles of modern architecture" and two of these were "the respect for engineering purity" and "the desire for pure geometric forms." I wonder if life is that "pure"! How pure is a design after it has grown up through a struggle in the hands of an imaginative designer?

But we can all make mistakes; recently a pure dome was used for an auditorium and as the design progressed the designer found that in order to ventilate and acoustically treat the enclosed space he had to camouflage completely the pure interior form of his building. What was simple then? Moral: the simple form is good but should not be violated to make it work; simplicity may follow complexity.

Simple forms are obviously orderly and seem to have great meaning and comfort. Perhaps this is because they symbolize unity, or perhaps along with the resurgence of religious faith they demonstrate a universal power, or perhaps they are reassuring because they are immediately understood by all people.

Simple forms have two design characteristics that particularly interest me and that I find cropping up in much modern work that I admire: one is balance or symmetry — something that I find most fascinating, although in school we all thought it "old-fashioned," dull, and "Beaux-Arty." The other characteristic of simple forms is that they seem more interesting when used in large scale: hence, I believe, the trend to more monumental and heroic scale in recent modern work. And to me this big scale almost automatically gives a building more significance — and repose. Burnham's "make no little plans" comes to mind, and especially John Ruskin's remark that "every increase will bestow on it a certain degree of nobleness."

So I picture many of us in a state of considerable excitement — striving for order, simplicity and bigness. We find satisfaction in organizing activities in a building, puzzling out the construction of a sound frame, well-lit rooms, good hearing conditions, interesting-looking spaces, all within a simple outline. All this ought to be good for a jumpy world.

It seems that our biggest job is to simplify our lives in order to make our efforts count. In 20th century terms, that is "Direction through Space." Let us add to it only big ideas — large scale!

A talk given at the 1956 Annual Meeting of the Southwest Oregon Chapter, American Institute of Architects, Eugene, Ore.

By **JOHN M. MORSE**

DESIGN FOR SOUND ABATEMENT IN NOISY SCHOOL AREAS

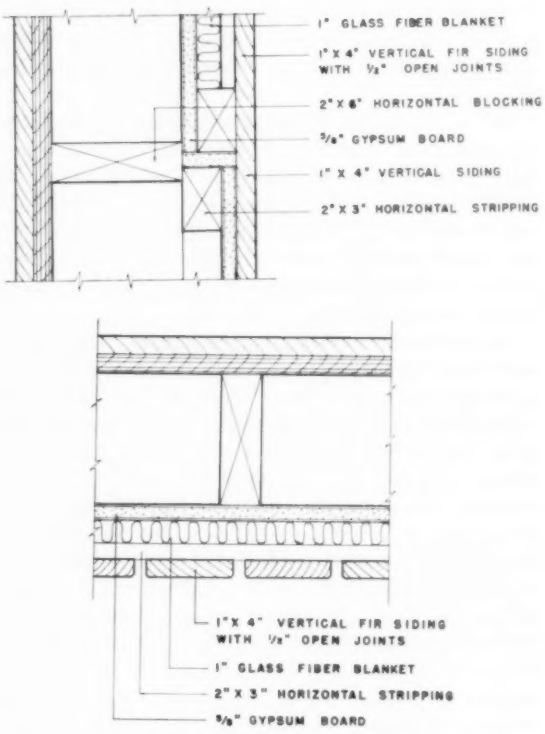
Centerville, California, High School

Falk and Booth, Architects and Engineers
Dariel Fitzroy, Acoustical Engineer

To ABSORB some of the inevitable noise in high school gyms and choral rooms, the walls of this gym at Centerville High School, and the ceiling of its choral room have been designed as slit resonators. This provides a means of absorbing enough sound so that there are no excess decibels, but not so much that the rooms are "dead." The absorbent panels set behind the open joints in the vertical fir siding are staggered so that one is never opposite another.

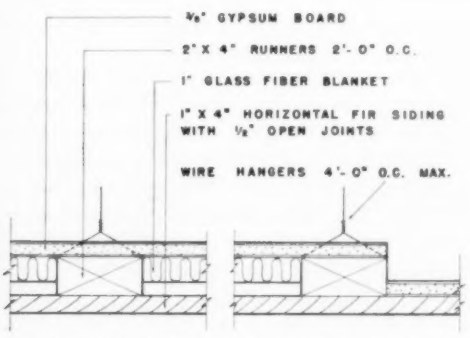
In the gym, the wall is flush below a height of 7 ft; above this height the siding is laid with open joints which admit the sound to the insulating panels behind. In the choral room a similar system is used for the ceiling with runners hung from wires 4 ft o.c.

Walls are of Douglas fir laid vertically, finished with one coat of wax stain. Laminated wood beams, stained, are used for framing in the gym; purlins are painted pale blue; acoustical tile is used between beams. In the choral room walls, partially lined with acoustical tile and splayed for further acoustical effect, are painted, as is the resonator ceiling.

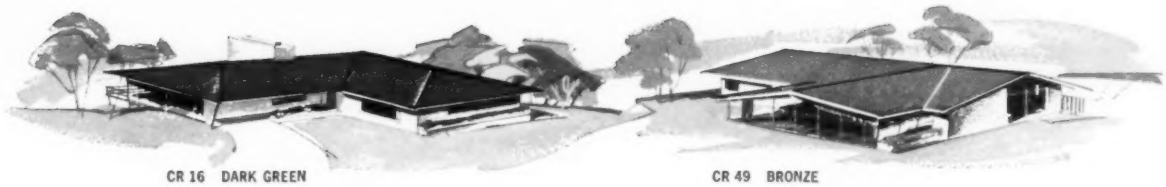

1" GLASS FIBER BLANKET
1" X 4" VERTICAL FIR SIDING WITH 1/2" OPEN JOINTS
2" X 6" HORIZONTAL BLOCKING
5/8" GYPSUM BOARD
1" X 4" VERTICAL SIDING
2" X 3" HORIZONTAL STRIPPING
1" X 4" VERTICAL FIR SIDING WITH 1/2" OPEN JOINTS
1" GLASS FIBER BLANKET
2" X 3" HORIZONTAL STRIPPING
5/8" GYPSUM BOARD

Sections through slit resonator wall in gym

Roger Sturtevant


5/8" GYPSUM BOARD
2" X 4" RUNNERS 2'-0" O.C.
1" GLASS FIBER BLANKET
1" X 4" HORIZONTAL FIR SIDING WITH 1/2" OPEN JOINTS
WIRE HANGERS 4'-0" O.C. MAX.

Section through slit resonator ceiling in choral room



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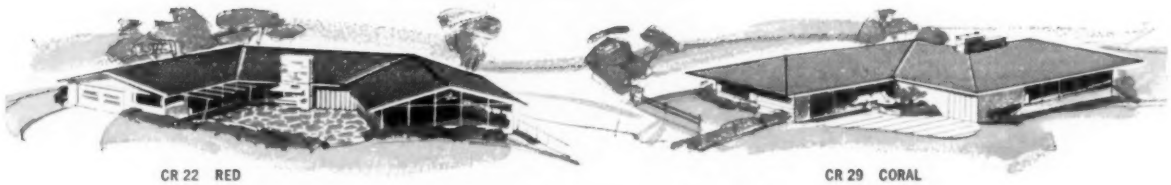

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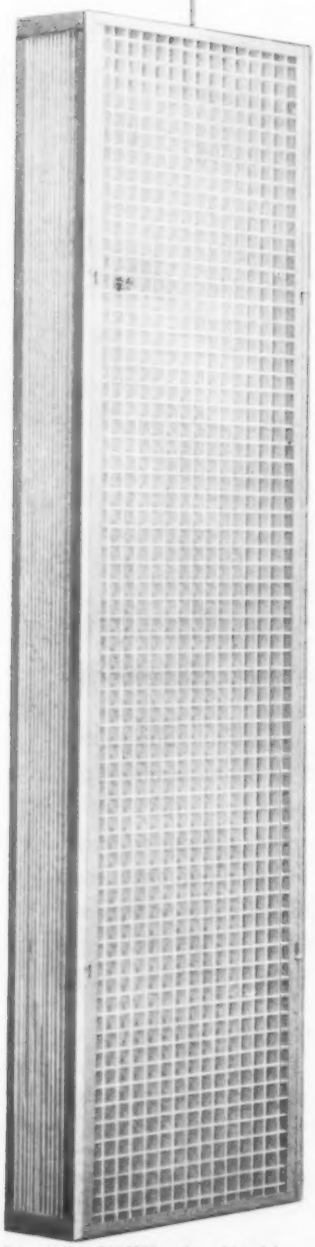

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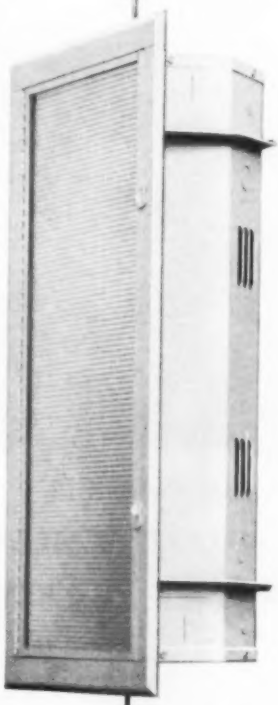

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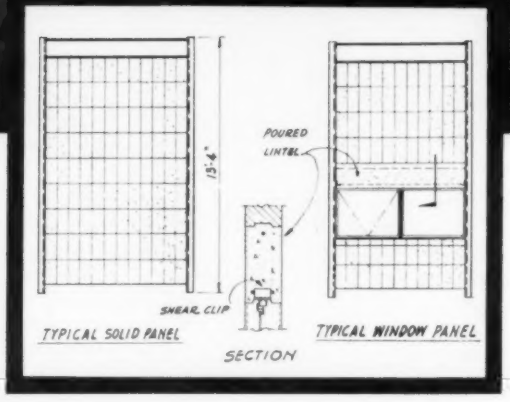

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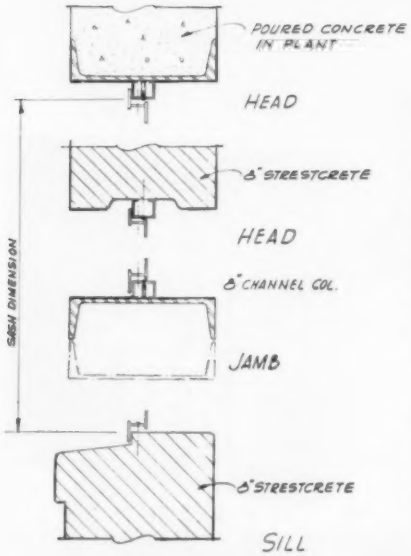

By specifying STRESTCRETE, it was possible to design this school with completely luminous ceilings. With this excellent light source expansive window areas are unnecessary. STRESTCRETE integral steel frame wall panels were factory assembled to exact specifications and delivered to the jobsite in sequence. They were speedily positioned and welded into place with no waste of time, labor or materials. This is real construction efficiency and full labor utilization...the *Economy* of STRESTCRETE in action!

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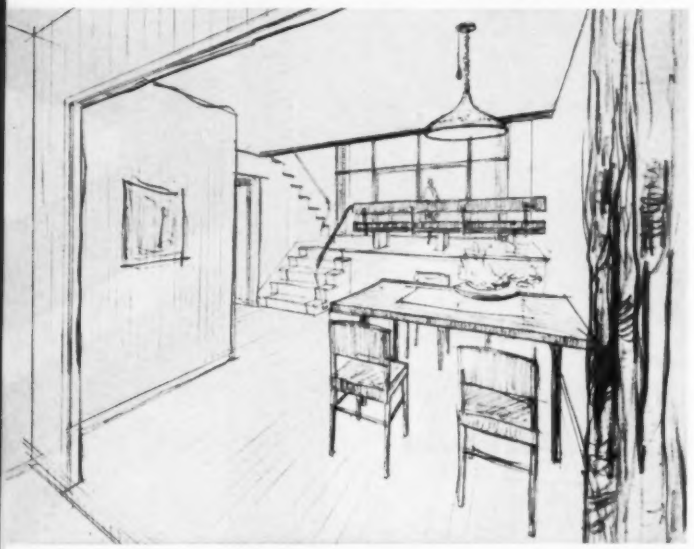
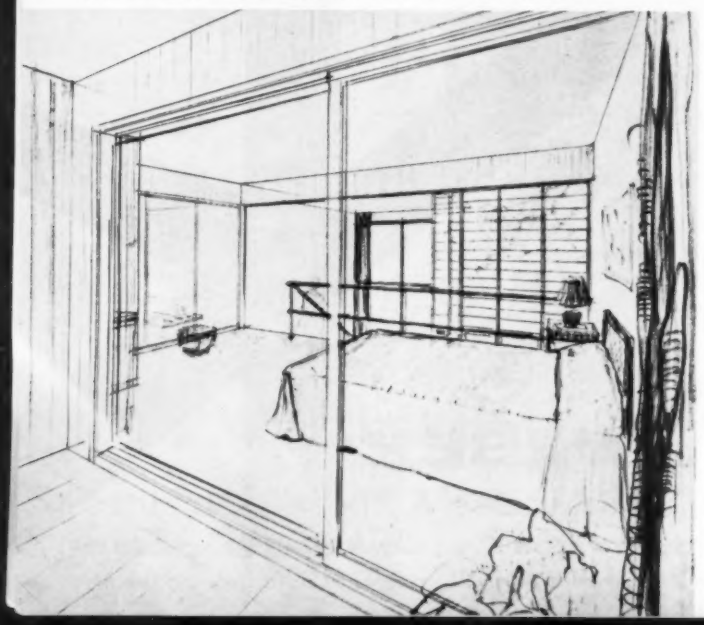
Glass-walled living room opens onto terrace and hillside garden; stair up to bedroom, down to dining room, kitchen at opposite end of living room

Looking downhill: elevator tower at left, living rooms at first level, bedrooms at second, penthouse at third



Dining room (above) is four steps below living room. Bedroom (below) is over dining room; sliding panels close it off from living room

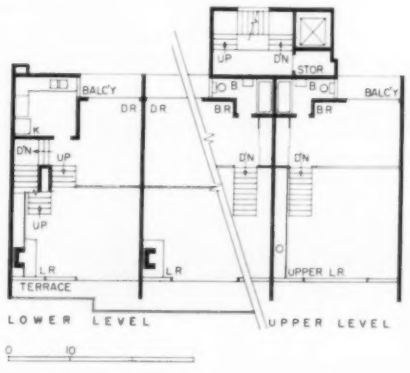


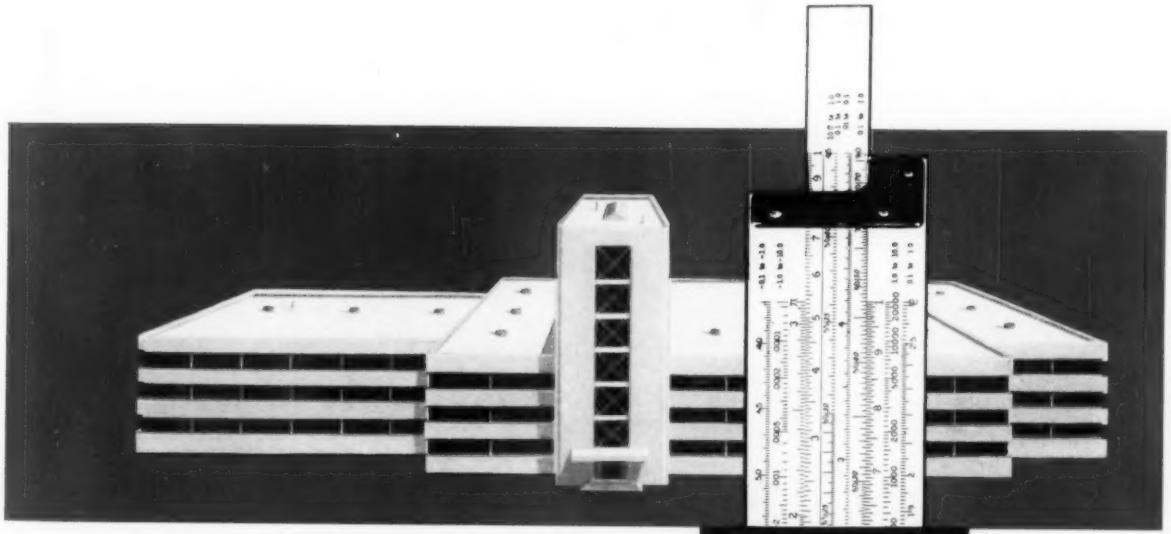
FIVE-UNIT APARTMENT FOR A STEEP HILLSIDE LOT

San Francisco, Calif.

Francis Joseph McCarthy, Architect

As LEVEL LOTS in Pacific Coast cities become rarer, interest in skillful use of the steeper hillside lots which are still available has increased. This apartment building was designed for a lot on San Francisco's Telegraph Hill, 40 by 60 ft in size with a grade of more than 45 deg. Three of its five apartments have a two-story plan (which solved problems caused by a 40-ft height limit in the area) consisting of living room, dining room, bedroom, kitchen and bath; a fourth unit is a one-room apartment and the fifth is a three-bedroom, two-bath penthouse apartment. The two-story apartments have balconies and a hillside garden in the rear. There is parking for one car per apartment. The building was designed for wood frame and steel construction.





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Free flowing poured gypsum concrete sets rapidly into a light, strong, fire resistant roof. The undersurface of Kaiser Gypsum form board makes a clean, beautifully finished ceiling which requires no further treatment.

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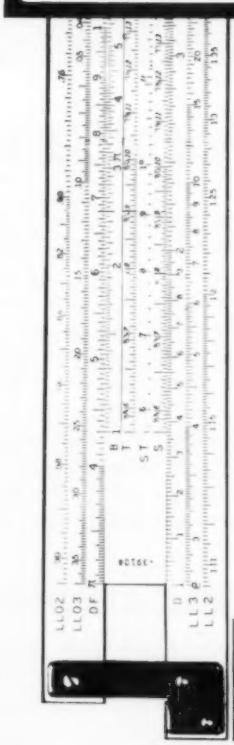

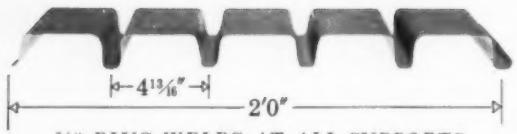

¾" PLUG WELDS AT ALL SUPPORTS

Notice the Widman section is distinguished by a fifth rib. The extra rib increases the section modulus. Widman makes 18 and 20 gauge decking of high-quality United States Steel sheets.

TYPICAL SIDELAP

Steel roof decking saves framing and insulation costs

Here's a perspective on 46,600 square feet of roof decking, fabricated and recently erected by George D. Widman, Inc., of Gardena, California. Formed from USS steel coils, the two-foot-wide sections were laid in 22 and 28 foot lengths. Steel decking (20 gauge) was selected for the job to allow greater load-bearing capacity and important construction economies.

These 5-rib steel sections have the required strength to span greater distances and thus eliminate considerable amounts of framing. And the one-inch space between the ribs (narrower than usual) reduces thickness of insulation over open spaces. The incomparable strength of steel makes it ideal for roof decking. To obtain the same strength from other materials, weight would have to be greatly increased . . . and with it the cost.

If you would like additional information and specifications on the use of steel roof decking both for commercial or *residential* construction, we will be happy to put you in touch with United States Steel customers here in the West who fabricate roof decking.

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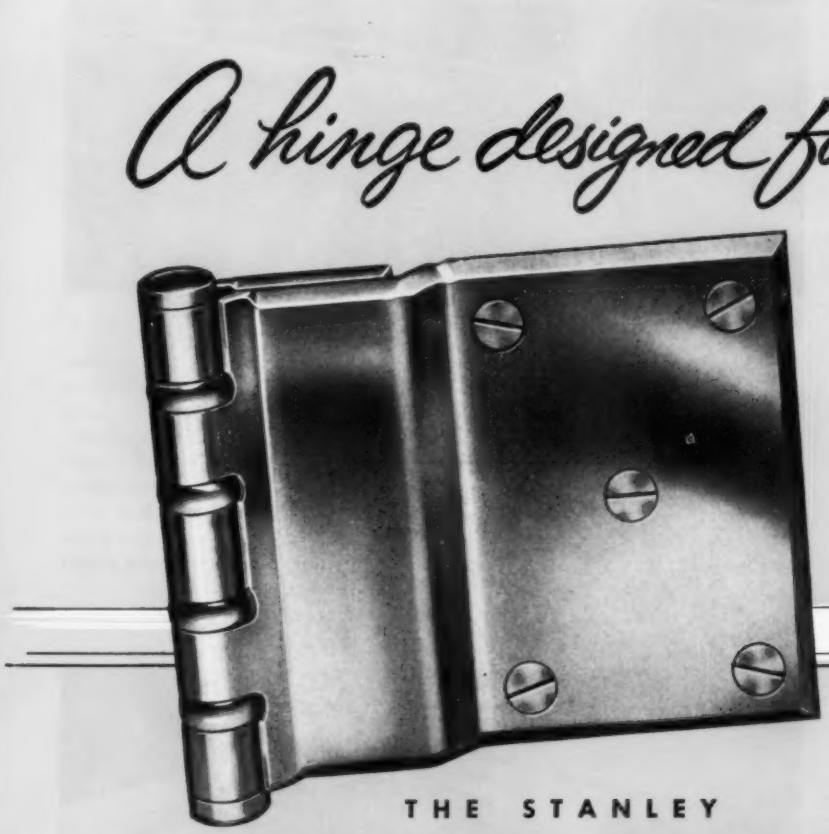
USS

UNITED STATES STEEL

A hinge designed for hospitals



This hinge swings door clear of opening—allows full use of framed space.

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APPLICATION

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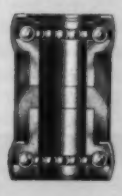
CONSTRUCTION

Extra heavy, cold rolled wrought steel. Standard finishes, or bonderized and prime coated. Four *Full Jeweled* ball bearings on each hinge.



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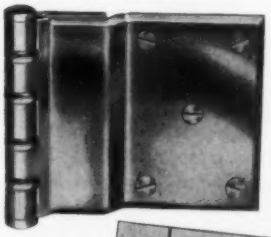

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Write for your free copy of "Stanley Hospital Hardware" H-75. Complete with illustrations and technical data.

STANLEY

WESTERN BUILDINGS

IN THE NEWS

Freight Terminal

This freight terminal for Pacific Intermountain Express Company is under construction on a 35-acre site in Simon's Industrial Tract in Los Angeles' central manufacturing district. Since one of the problems of motor freight companies is that of keeping freight moving in and out of the dock, facilities for expediting this are important. This building has a quarter-mile long tow-veyor system, with 2000 pallet-sized detachable carts, which operates continuously, moving freight from incoming cross-country trailers to city delivery units or from local pickup trucks to outgoing trailers. Both office and dock units are to be of concrete and steel construction; the dock uses a rigid frame structure. Albert C. Martin and Associates are architects and engineers for the project

Electronics Plant and Laboratory

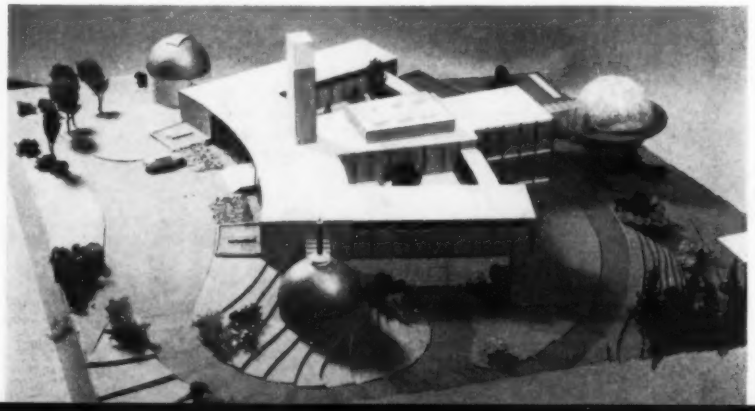
Consolidation of its four plants, presently located in Pasadena, will be possible when the new Byron Jackson electronics plant at Santa Ana, Calif., is completed. First units of the plant, now under construction, will consist of a main plant and office building and an environmental testing laboratory. John Kewell and Associates are architects and engineers

Hotel in Southland Center

A 600-room "luxury" hotel will be a part of the $25,000,000 Southland Center to be built in downtown Dallas, Texas. The Sheraton-Dallas hotel will have 600 rooms on 28 floors, a 10,500 sq ft ballroom (making it "Texas' largest" according to report), elevators and moving stairways and an automobile elevator operating from street level to second floor where lobby and special rooms will be located. Hotel is scheduled for completion in 1958. Welton Becket & Associates are architects and engineers, with Mark Lemmon, Dallas architect, as associated architect. Besides hotel, Center will have 42-story home office building for Southland Life Insurance Company

Museum for Scientific and Industrial Exhibitions

Three spherical chambers are dominant elements in the proposed Museum of Science and Industry to be built at the entrance to the new Portland, Ore., zoo now under construction. These will provide an observatory, a planetarium and a camera obscura. Besides such features the building will contain facilities for scientific and industrial exhibits (especially of native industries), with natural history in one wing, science in another, two courts for open air exhibitions, and a Foucault pendulum in the 60-ft central tower. The building will be of concrete construction, with northwestern woods used as wall finishes. Sundeleaf, Hagestad and Peace are architects



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LOCATION VALUE. Improvement programs like this downtown shopping corner are attracting attention throughout the country. If you have location assets—"what to do now" is vitally important to the future of your business. Managements at this decision level have found it helpful to study the profit potentials of remodeling with Ceramic Veneer.

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Anchor post snap locks into secure position — no visible screws

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The finest Vinyl coated fabrics, completely washable

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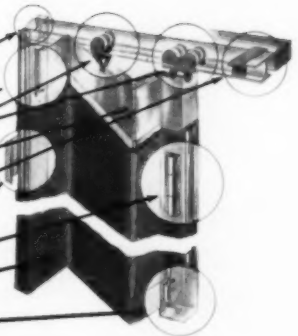

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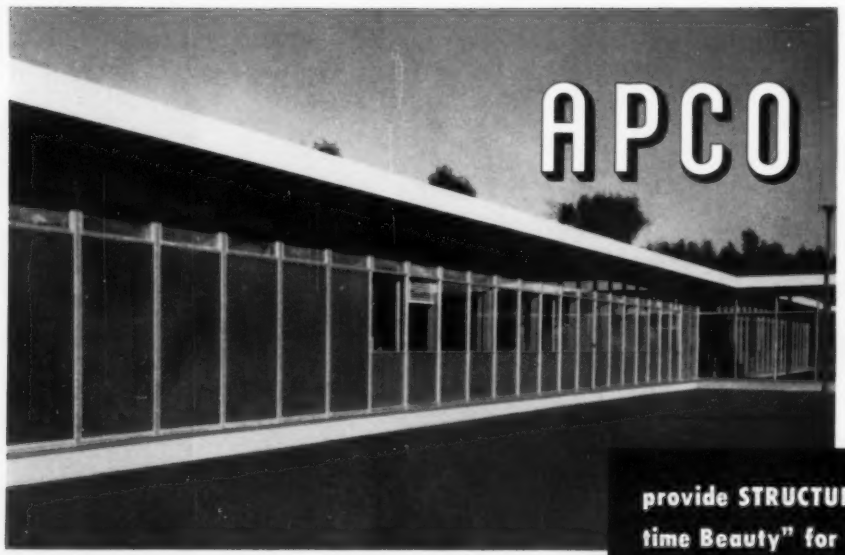

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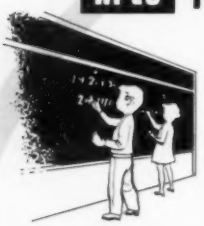

have special surface textures that are ideal for writing and very easily kept attractively clean. Porcenell Chalkboards are available in a restful shade of APCO Green... through all chalkboard contractors.

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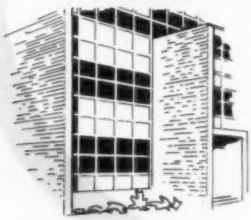

are mechanically fabricated insulated panels of extreme flatness primarily for use in curtain wall construction. All materials are incombustible. The panels are designed and manufactured for each specific job.

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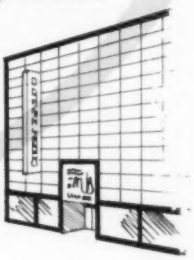

of Porcelain Enamel on Steel ...a water-tight, permanent facing material with extreme flatness. APCO Self-Flashing methods are time-tested for durability, basic design details and fastening methods have been in practical use for over fifteen years.

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"Fightin' b'ars is a durn sight easier," roared Dan'l, "than fightin' to stay comfortable in a log cabin." Heat blazin' in through the chinks in summer—and a-pourin' out in winter. Noise, dampness, dust, drafts...no wonder he lit out for them thar hills and left it all behind him! Today, we've left these discomforts of home behind us, too...thanks to Fir-Tex. Wonderful Fir-Tex products that insulate a home, *as they build.* Fir-Tex sheathing, for instance, (either asphalt impregnated, or asphalt impregnated-asphalt coated) provides tremendous bracing strength along with superior insulation against heat, cold, and dampness. Fir-Tex Acoustical Tile provides an attractive interior that insulates against noise. Like Dan'l Boone, your clients have set their sights on better, more comfortable homes—which is why farsighted architects *always specify Fir-Tex.*

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WASTE SPACE

Opportunity Knocks A Second Time

At last there is a second chance for the architect who wishes he could return to school, after a few years' experience in the world have given him a new insight on the things he "studied" as an undergrad. Not that there have been no courses available to him on the technical and practical aspects of architecture; but even these have not been exactly numerous. But this second chance is different: this is a chance for practicing architects, immersed willy nilly in the practical problems of practice, to refresh their souls in that side of architecture called intangible, the side which alone makes *architecture*. Those who take the opportunity will find that they are revitalizing themselves through other than the traditional means: this is a "post-professional" opportunity — for practicing architects only.

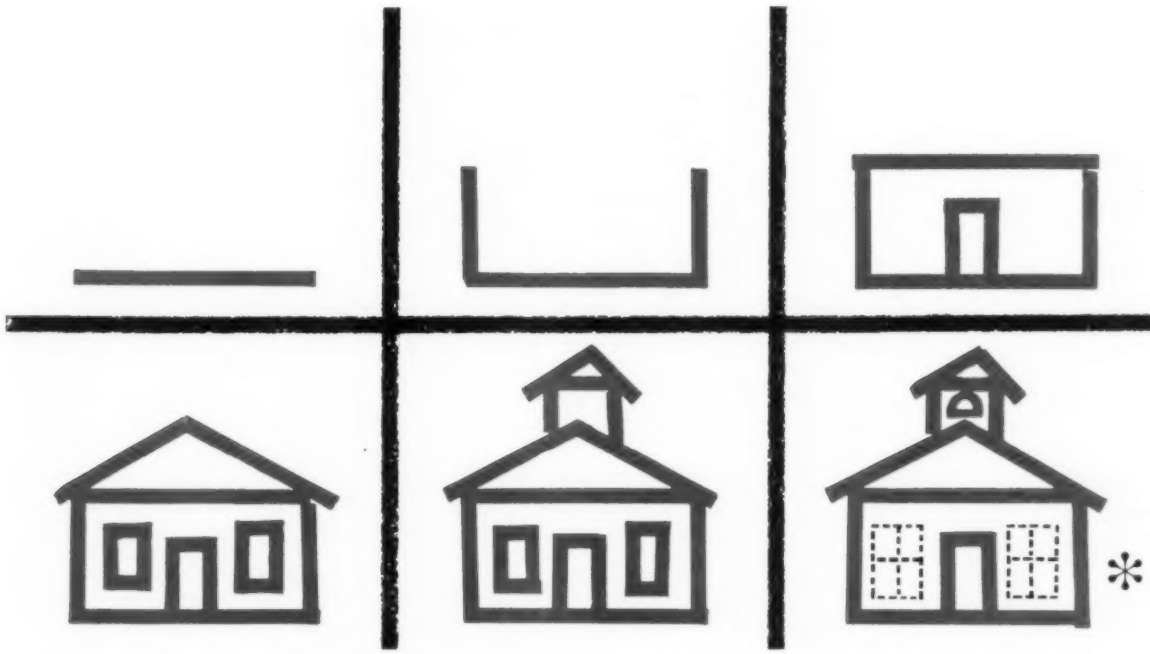
In cooperation with the East Bay chapter, A.I.A., the college of architecture at the University of California through its extension division at Berkeley, is offering an evening seminar in which members can consider the design factors ("esthetics") of architecture in terms of the immediate problems they face as practicing architects. Jesse Reichek, painter and lecturer in architecture at the University, will be the instructor. His program is to promote discussion of the visual aspects of architecture on the most basic terms — light color, scale, materials, and so on — as a means toward stimulating a more imaginative approach to architectural concepts. How long and how much has such an opportunity been needed! Perhaps from this starting point we may indeed have a revitalization of architectural thinking.

Further information is available from the University Registrar, University of California, Berkeley 4, Calif.

Can Advertising be Too Subtle?

Only registered architects can "advertise" themselves as architects in California, and if they belong to the A.I.A., use of these initials could constitute "advertising" oneself as an architect. For the next five years 999 Californians will seem to be advertising themselves as architects (to those who know what A.I.A. means) — and the State Board of Architectural Registration can't do a thing about it. Not that it would want to, in this case. AIA is on 999 of the state's new license plates. Maybe some architects have them. Anybody know?

—E. K. T.



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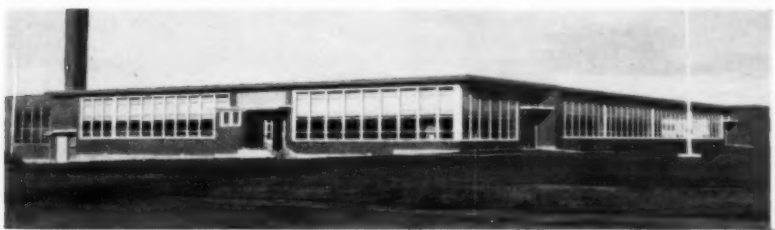
Soulé steel and aluminum windows end construction delays caused by slow, Eastern shipments of windows. Our plants in California, Oregon and Washington supply you with the windows you want, when you need them, installed by our crews. Western Soulé window service means faster transmission of details, too.

There's no limitation to standard sizes when you specify Soulé Paramount Steel or Series 900 Aluminum windows. And our design engineers will assist you with problems concerning materials, sizes and shapes, to help you get *your* window at the lowest cost. A big plus service is expert installation by Soulé. *And remember, we deliver on time!*



Opened on time! Liberty School, Marysville, Washington. A steel installation by Soulé where prompt manufacturing and service helped open school on time! Architects: Mallis and De Hart. Contractor: Paul Odegard.

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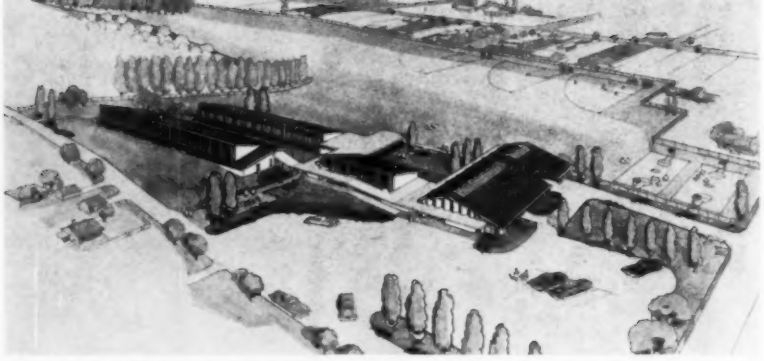


The Center Street school is one of two designed by San Francisco architects Corlett and Spackman which are now under construction in Castro Valley. John Sardis is structural engineer; James Gayner, mechanical engineer. This school, a state-aided project, will cost $457,000. Its structure uses tapered steel beams and precast concrete wall panels. Panels under windows are enamelled steel set in aluminum mullions

WORLD SEISMIC MEET TO BE HELD JUNE 12–16

A WORLD CONFERENCE on earthquake engineering, to be held June 12–16 on the University of California campus in Berkeley, will mark the fiftieth anniversary of San Francisco earthquake and will bring together seismologists and seismic engineers from many parts of the world.

The conference will be presented jointly by the Earthquake Engineering Research Institute, a non-profit corporation dedicated to furthering knowledge of earthquakes and their effects, and the University of California Department of Engineering, in coöperation with the Structural Division of the American Society of Civil Engineers, and the Structural Engineers Association of California.

The conference will not only review the development of seismology and earthquake engineering, but will offer a program of technical papers on aseismic design and construction practices in all major seismic areas of the world.

NEW CONCRETE TEST DETERMINES SOFTNESS

A NEW TEST for softness of fresh concrete, devised at the University of California's Engineering Materials Laboratory at Berkeley, will probably make for a better quality of concrete in construction. The test has been adopted as a standard method by the American Society for Testing Materials.

In the test a 6-in., 30-lb steel ball is set on fresh concrete and its penetration is measured by means of a graduated handle and reference stirrup, according to Dr. J. W. Kelly of the University's civil engineering department.

NEW BUILDING CODES FOR PORTLAND, SEATTLE, SF

PROPOSALS for building codes have been occupying the attention of city council members in two Northwest cities and one California city in recent months.

In Portland, a building code, in preparation for the past six years, has been adopted and will go into effect on July 1, 1956. The new code supersedes the much-amended 1924 code under

(Continued on page 48-24)

Built-in telephone outlets are a must in today's homes

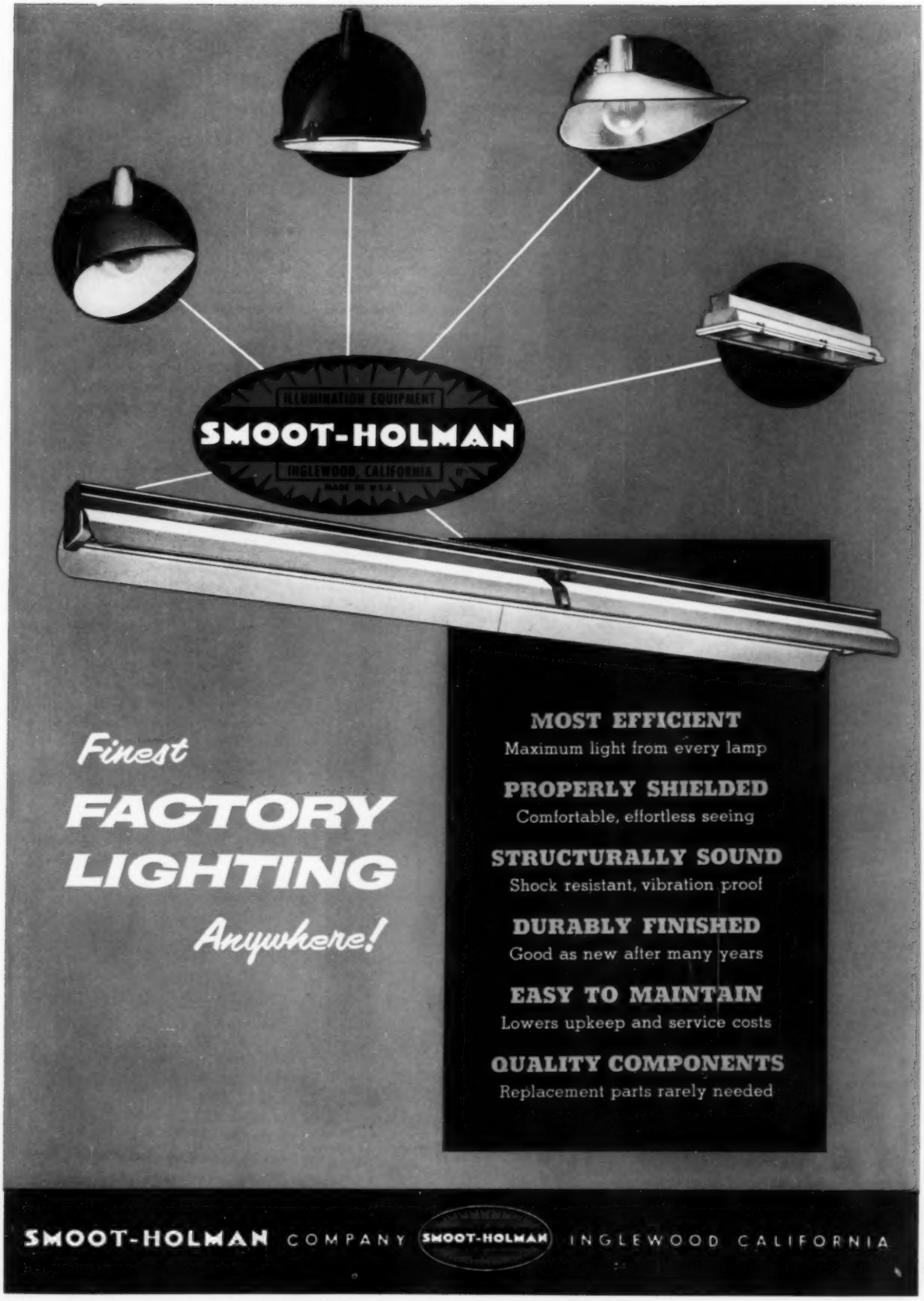
says ARTHUR K. EHRLICH, Arthur K. Ehrlich & Associates, Burbank, Calif. Builders, *Better Homes & Gardens* Idea Home for 1955 in Glendale, Calif. (pictured below)

"We wouldn't dream of building a home without concealed wiring and telephone outlets in the original plans. It's the kind of detail that sets the well-built home above the average. It just has to be there." Telephone outlets in rooms that are used most add much to the value of Ehrlich homes.

To successful builders like Mr. Ehrlich, who are setting living standards in the Pacific West, complete telephone planning is as basic as adequate electrical wiring. We are always ready to help you plan built-in telephone facilities. Just call us and ask for our *free* Architects and Builders Service.

Specify built-in telephone facilities —a sign of good planning

Pacific Telephone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QUALITY COMPONENTS
Replacement parts rarely needed
SMOOT-HOLMAN COMPANY SMOOT-HOLMAN INGLEWOOD CALIFORNIA

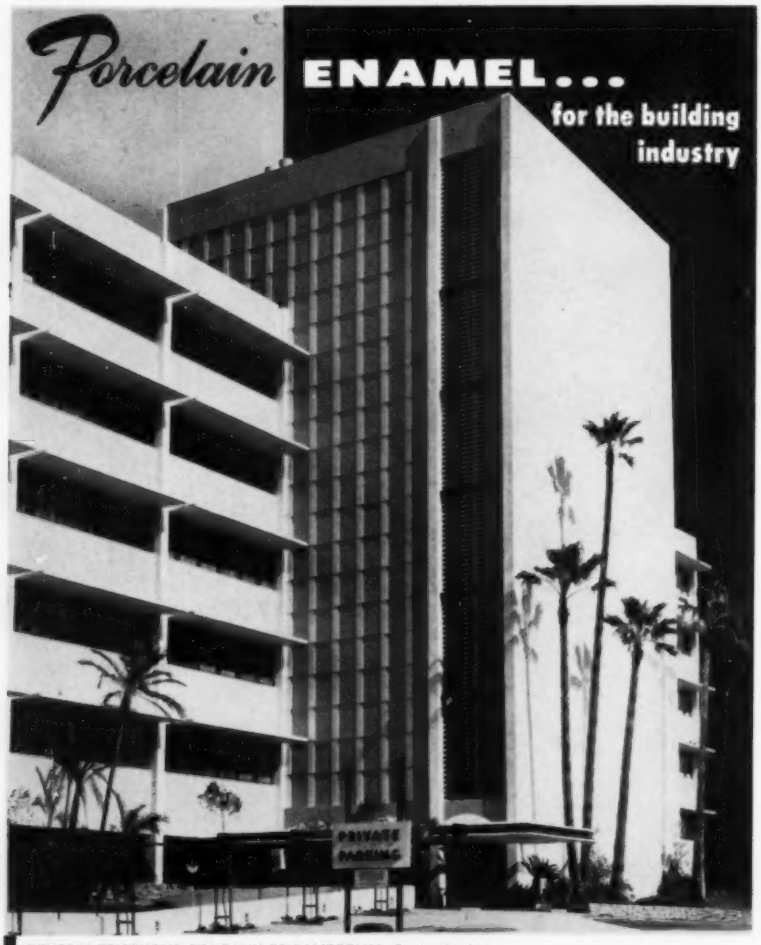
NEW BUILDING CODES

(Continued from page 48-22)

which the city has been operating, and will be kept up to date by a code revisions committee consisting of an architect, an engineer, a representative of material dealers, a contractor and a member of the local Chamber of Commerce's industrial committee. Both the fire marshal and the chief of the bureau of buildings will be ex-officio members.

In Seattle, a proposed new building code is being discussed by city officials, architects and other members of the construction industry. The proposed code includes provisions for the control of air pollution, a currently lively topic in all parts of the West. Under the new code, incinerators would be designed to limit smoke and fly ash, cutting down on the dirt in the air.

San Francisco's Department of Public Works submitted its revision of the city's building code to the Board of Supervisors some months ago. The proposed new code, containing a revised system of fees and permits and a number of new provisions to remedy conflicts between sections of the building trades industry, is being studied by a board of review prior to action by the City's Board of Supervisors.



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ARCHITECT AND ENGINEER: Albert C. Martin and Associates
CONTRACTOR: George A. Fuller Company

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KAISER AND HILTON PLAN NEW HONOLULU HOTEL

A MODERN 22-story hotel on Waikiki Beach, the Hilton Hawaii Kai, will be built in the near future by Henry J. Kaiser and Conrad N. Hilton, according to a recent announcement made in Honolulu. It will be the tallest building in Honolulu.

The Hawaii Kai will contain 400 air conditioned guest rooms in the main building; studio lanais, bungalows, a lagoon, a native Hawaiian village, restaurants, shops, convention facilities, tennis courts and an ocean landing dock will also be built as part of the project.

Welton Becket & Associates, Los Angeles architects and engineers, and Edwin L. Bauer of Honolulu are architects for the project.

GRAVEL STRIKE ENDS IN SOUTHERN CALIFORNIA

A COSTLY three-month strike against 29 Southern California sand, gravel and ready mix concrete firms was ended on the last day of 1955 — to the relief of owners, architects and contractors of an estimated $500,000,000 worth of projects which were either closed down or curtailed during the walkout. While the actual strike involved some 1600 teamsters, it idled about 100,000 construction workers.

Although some points at issue were still to be arbitrated at the strike's end, the construction rate in the area gradually returned to normal as regular deliveries were resumed right away, and enough material was on hand to supply immediate needs of construction companies.

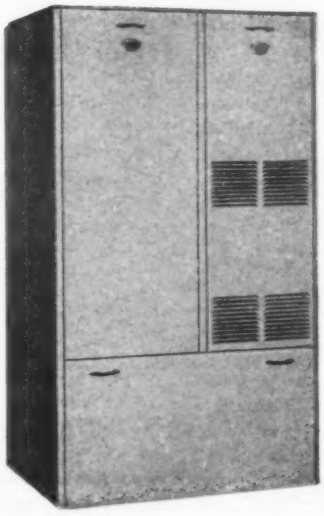
ELECTRONIC COMPUTERS MUST BE PLANNED FOR

PREPARATION for the installation of electronic computing instruments — a rapidly growing field in itself — is too often underestimated by business firms, according to Dr. Paul Kircher of the U.C.L.A. School of Business Administration.

"Executives who would not think of constructing a building without long months of careful planning by engineers and architects too often believe an elaborate electronic data processing system

(Continued on page 48-26)

SHARP POINT! WEATHERAMIC SALES APPEAL



HEATING-COOLING COMBINATION

To make a penetrating selling point long before you get to the feature story, show Utility's Weatheramic® Air Conditioner. At first sight, this year 'round combination heating-cooling unit puts up a winning selling "front" in an eye-pleasing new color—Bank Note Green. With Bonderized undercoat and durable baked enamel exterior, new Bank Note Green is truly a lifetime finish.

Under its dashing appearance beats a sturdy heart by Utility, with all the years-ahead refinements you've come to expect: "Floating Chassis" eliminates cabinet vibration—permits installation of furnace cabinet now, hermetically sealed refrigeration unit later; large 12" double width blower resiliently mounted to shush fan noises to a bare murmur; fully automatic controls for split-second switch from summer-to-winter, winter-to-summer operation; compact cabinet styling to save precious floor space.

To build and maintain your already enviable reputation, next time be sure to specify the distinguished good looks, superior engineering, guaranteed dependability and common sense pricing of Utility Weatheramic® Heating-Cooling Combinations.

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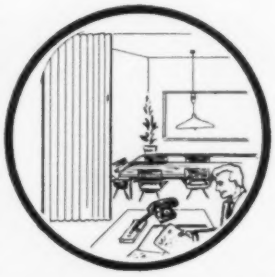

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modernfold DOORS ®

ELECTRONIC COMPUTERS

(Continued from page 48-24)

can be installed in a matter of weeks," Dr. Kircher said. "Even electronics experts have sometimes been too optimistic in their effort to persuade management of the value of their new systems."

A more thorough study of management's needs so that the machines add to the information already available with standard methods, will help users to get the maximum benefit from electronic equipment, he said. It should also counteract some of the current disillusionment with electronic equipment which stems, he declares, from the belief that the huge machines are too complex for standard business uses. Actually, business needs are more complex than is ordinarily realized, according to Dr. Kircher.

FESTIVAL TO CELEBRATE "DISCOVERY" OF PRINTS

A MODEL Japanese farm house, completely furnished and set in a garden, will be built at the Oakland Art Museum as part of the nine-day Japanese Centennial Festival of Culture to be held April 28–May 6. The festival is being held to mark the hundredth anniversary of the "discovery" of Japanese prints in Paris.

In addition to the model house, the exhibition will include ancient and modern Japanese art treasures, costumes, fabrics, scroll painting and calligraphy, and Japanese films. Concerts of American and Japanese music and talks on various Japanese art forms will also be a part of the festival.

Sponsors for the festival are Japanese Ambassador Iguchi, San Francisco Consul General Yasuke Katsuno, the Japan Trade Center and Japan Air Lines. Saburo Hasegawa, visiting professor at the California College of Arts and Crafts, and Harry Jackson, festival chairman, planned the program. Paul Mills is director of the Oakland Art Museum.

A.F. ACADEMY TO HAVE CLOSED CIRCUIT TV

AN EIGHT-MILE closed circuit television system to cost about $1,500,000 has been proposed for the U. S. Air Force Academy as part of the preliminary planning of electric and communications circuits for the Academy.

Electricity used by the Academy when it is completed will amount to around 12,000 kw, or about one-fourth the amount now used by the city of Colorado Springs, according to Air Force spokesmen. The Colorado Springs utilities department will furnish the power. There will be two telephone systems — academic and residential — including 6000 instruments. Five public address systems and other systems such as fire, crash and guard systems will be installed, making a total of 12 separate communications systems on the grounds.

The television circuit, particularly useful in classrooms and hospitals, will be used to show live demonstrations or film and slides.

APOLOGIES

Apologies: to Albert C. Martin & Associates, Los Angeles architects and engineers, for locating the recently finished, reinforced concrete and steel framed North Hollywood May Company department store in the wrong Southern California Valley. The North Hollywood store is in the San Fernando Valley, where it is part of one of the largest suburban shopping centers in the country. Another May Company store designed with a prestressed concrete frame by the same architects and engineers is going up in the San Gabriel Valley.

OBITUARIES

William Henry Wheeler

William Henry Wheeler, retired architect, died in San Diego on February 1. He was 83 years old.

Mr. Wheeler, who came to San Diego in 1912, had previously been supervising architect for the Southern Pacific in Arizona. In San Diego he designed the San Diego Club, the Balboa Theater and the Hotel San Diego annex. He also designed the Four Square Gospel Temple in Los Angeles and the Governor's Palace in Mexicali, Baja California.

Mark Henry White

Mark Henry White, retired architectural engineer, died on February 26 at his home in Berkeley, California. He was 80 years old.

Mr. White was for many years associated in practice with his brother-in-law, San Francisco Bay Area architect Bernard Maybeck, whose buildings include such as the Palace of Fine Arts in San Francisco, the Christian Science Church and the Faculty Club building in Berkeley and many fine residences in the San Francisco area.

AMERVENT installation: Jal Elementary School (Jal, New Mexico) Superintendent: J. L. Burke; Architect: George Graves; Engineer: McKay & Houston; Mechanical Contractor: Hollis Plumbing & Heating.

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Amervent® built especially for schools in Mild Climate Areas, provides fresh air cooling, heating and ventilating within the nominal cost of heating alone!

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ALASKA BASES TO GET MORE U.S.A.F. BUILDINGS

THE steady build-up of installations for the Alaska Air Command is being continued with another $30,000,000 construction program due to commence as soon as the weather permits this spring, according to reports from the Alaska District Corps of Engineers. These projects, scattered throughout Alaska, include installations at Galena, King Salmon, Bethel, Chiniak, Homer, Kotzebue, Fort Yukon, Sitkinak, Sparevohn and Indian Mountain.

Already under construction in Alaska are projects for the Air Force whose total cost is around $55,000,000 at three Air Force bases — Elmendorf, Ladd and Eielson. Work at these three bases has cost more than $400,000,000 in the ten years since the Alaska Air Command was established.

GIANT WIND TUNNEL NEARS COMPLETION

WINDS that blow at three times the speed of sound will be created in what is said will be the world's biggest supersonic tunnel for aerodynamic research. The tunnel, now being built at Ames Aeronautical Laboratory at Moffett Field, Santa Clara County, Calif., is due to be completed sometime this year. Research on both government and private industrial projects will be carried on at the giant tunnel.

The largest section of the tunnel — which is also the last to be installed — is 11 by 11 ft and will discharge 350 tons or 6,250,000 cu ft of air per minute. Smaller circuits, already completed, are 9 by 7 ft and will carry 90 tons or 3,200,000 cu ft of air per minute. Electronic computers will be used to analyze the data from tests in the tunnel.

PROFESSIONAL NEWS

Utah Chapter Revives Bulletin Publication

Part of a new program aimed towards "revitalizing" their chapter as a professional group is the Utah A.I.A. Chapter's handsome new lithographed bulletin, under the editorship of Fred W. Needham, John W. Sugden and John R. Smith. William Rowe Smith, the chapter's new president, in an introductory message in the first issue, said, "One of the vital sparks in any chapter is its bulletin. . . . It will be an important instrument in lifting the chapter toward our desired goal." A directory of chapter members was included in the first issue.

Professional Seminars Held in Seattle

A series of seminars on architectural practices was held in February and March by the Architectural Practices Committee of the Washington State Chapter, American Institute of Architects, with architects, contractors and estimators participating in the series. The seminars were open to members and non-members who are preparing for individual practice. Topics included construction costs, use of finishes, use of materials, use of various window types, job inspection and building and zoning codes. The survey of building materials was held to discuss new and familiar products in each category.

Architect in Public Service

Charles Luckman, architect of Los Angeles, was Southern California general chairman for the observance of Brotherhood Week, February 19–26. The appointment was made by the National Conference of Christians and Jews, sponsor of the week's annual observance.

CALENDAR OF WESTERN EVENTS

• April 11–13: South Pacific Coast Region Illuminating Engineers Society, Golden Anniversary Regional Conference. Mark Hopkins Hotel, San Francisco, Calif.

• April 11–14: American Industrial Development Council 1956 Convention, St. Francis Hotel, San Francisco, Calif.

• Through April 15: World Premiere, Walter P. Chrysler Collection of 100 Paintings, Portland Museum of Art, Portland, Ore.

• April 21–29: Oakland Home and Garden Show, Exposition Building, Oakland, Calif.

• April 23–25: 25th Anniversary Conference, American Institute of Decorators, Sheraton-Palace Hotel, San Francisco, Calif.

• April 28–May 6: Bunka Sai Japanese Centennial Festival of Culture. Oakland Art Museum, Tenth and Fallon Streets, Oakland, Calif.

• May 14–18: National A.I.A. Convention, "Architecture for the Good Life." Biltmore Hotel, Los Angeles, Calif.

• June 12–16: World Conference on Earthquake Engineering, University of California, Berkeley.

• June 14–24: Construction Industries Exposition and Home Show, Pan Pacific Auditorium, Los Angeles, Calif.

WESTERN SECTION

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MANUFACTURERS' PRE-FILED CATALOGS

Catalogs of the firms listed below are available in the 1956 Sweet's Catalog Files as follows:

a — Architectural File (green)
ic — Industrial Construction File (blue)
lc — Light Construction File (yellow)

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	Utility Fan Corp.	48–25
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Western advertising offices: LOS ANGELES, Bob Wettstein, 672 S. Lafayette Park Pl.; PORTLAND, Bob Wettstein, 921 S. W. Washington St.; SAN FRANCISCO, Bob Wettstein, Howard Bldg., 209 Post St.

"sound by Bogen, of course..."

Among America's leading architects and their engineers, it's "Sound by Bogen, of course . . ." They know that when it comes to shoulder-to-shoulder assistance — from specification writing and estimating right through to assisting the electrical contractor in the installation — Bogen has the know-how to insure a flawless Sound System.

Sound is our business — and we sell more Sound Systems than any other manufacturer. This pays off for you — because in becoming the leader, we have assembled an engineering staff and a field-trained distributor organization that know your problems, know how to help you produce a superb Sound System for any application. We meet delivery deadlines and eliminate red tape. And we'll be standing behind the performance of the equipment we helped you install decades after the job is finished.

So, make that next Sound System, "Bogen, of course..." *No matter how much you spend, your client cannot get a more dependable or more practical Sound System!*

david bogen co., inc.

29 NINTH AVENUE, NEW YORK 14, NEW YORK

Manufacturers of SOUND SYSTEMS FOR SCHOOLS • HOMES INSTITUTIONS • INDUSTRY • STADIA • AUDITORIA • TRANSPORTATION TERMINALS • STORES • BANKS • RESTAURANTS • HOSPITALS

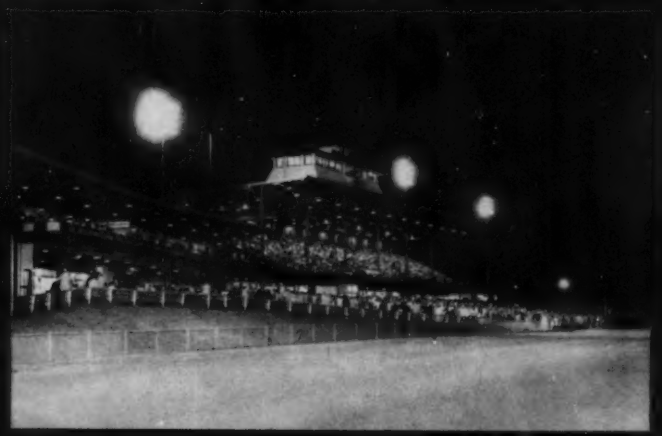
NAME THE COMMUNICATIONS PROBLEM...

TRANSPORTATION TERMINAL: Thousands of lives hang in the balance as scores of skilled CAA technicians at Idlewild Airport direct air traffic for the entire New York Metropolitan Area. A network of Bogen equipment in ultra-modern Hangar No. 11 augments the telephone system to handle calls where split-second answers are vital!

SCHOOL: Two-way communication as well as program distribution to every classroom, change signals, amplification in auditorium and gym—Clifton, N. J.'s new Junior High uses Sound by Bogen as an educational tool. Electronic Sound, of Newark, helped design this system. School Sound has long been a Bogen specialty.

COUNTRY CLUB: For the $3.5 million Ridgelea Country Club in Fort Worth, Bogen Distributor Clifford Herring designed and assembled a system that distributes to each or all 10 distinct areas, any of ten programs including wired music, phono, radio, tape or microphone. This separate area breakdown facilitates guest paging in an area without disturbing the other nine parts of the club.

STADIUM: At Vernon Downs, N. Y., America's most modern night trotting layout, Bogen sound does double duty: the public address system sounds the colorful post calls, music for the entertainment of the crowd, and the call and explanation of each race. A second Bogen system in the Racing Secretary's office is used for paging personnel and owners at the stable and paddock area, cafeteria, etc.



A BOGEN SOUND SYSTEM CAN SOLVE IT!

Across the country, in thousands of modern buildings the Bogen Sound System is as important to the working lives of the people inside as the heating, lighting, flooring. Day in, day out the Bogen Sound System will make their lives easier in so many ways – saving millions of wasted manhours and billions of useless steps – obsoleting snarled telephone switchboards – replacing the *clang* of the gong with the *human voice* – giving the 50 room school the intimacy of the old red schoolhouse – announcing alerts – soothing the sick – increasing worker productivity – even saving lives!

A Bogen Sound System and the specialists behind it will get that job done for you dependably, and at lower cost than you'd expect . . . just as they have in the famous buildings shown on this page.

CHURCH: Bonneville Ward of the Bonneville Stake, Church of Jesus Christ of the Latter Day Saints is but one of hundreds of L.D.S. wards from Alaska to Brazil to Paris equipped with Bogen Sound. Bogen Distributor, Sound by Craftsmen, of Salt Lake City, designed the elaborate system (including binaural sound in the chapel) in this classic structure.

INDUSTRY: Sixty-five individual speakers throughout the ten buildings and yard area of the sprawling new Sylvania Electric Chemical Division plant at Towanda, Pa., facilitate voice paging, music distribution, fire alarm and shift change time signalling 6 days a week, 24 hours a day. Bogen Distributor, Stallman of Ithaca, helped work out the details of this ultra-modern Bogen Factory Sound System.

AUDITORIUM: The thrilling voices of the world-famed singers in the Metropolitan Opera do not require electronic amplification, but Bogen sound is very much on the job behind the scenes. Day in, day out a dependable Bogen paging system is used to call "On Stage" to performers in their dressing rooms, and to give detailed instructions to distant lighting and scenery men during rehearsals. By Sun Radio, N. Y.

HOTEL: A convention or two a week plus full hotel services – that's the busy schedule of biggest-in-New York Hotel New Yorker. Eight Bogen Sound Systems perform yeoman service–amplifying music for dancers, relaying important speeches from one meeting room to another. Says the New Yorker's Sound Director, "I couldn't do without Bogen."

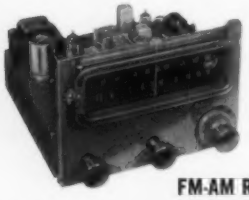
NAME THE COMMUNICATIONS JOB...

THE PROGRAM SOURCE

With a Bogen Sound System you can send a classroom change signal throughout a school (replacing a separate, expensive gong system), distribute work music or paging announcements anywhere in a factory, or amplify the sermon in a church. Your Bogen Sound Distributor sells program source equipment in all categories shown below.

The Microphone

There's a Bogen microphone for every use and in all price ranges, from this small desk model to the big telescoping 5 foot type for use on the auditorium stage.



FM-AM Radio

What's the local radio source? Bogen High-Fidelity Tuners are available in a variety of price ranges, for AM or FM only, or in combination. Tuners may be mounted in the Sound Control Center (See SCH 90 and TM 40, right).

Magnetic Tape

Many tape recorders can be used with a separate amplifier-speaker system. Or, the Bogen Custom Division can integrate a tape chassis into a rack-type control center such as shown (right).

Recordings

Bogen's extensive line of record players includes models for all speeds and record sizes, available as "built-ins" on anything from our largest consoles to a single PA amplifier.

THE CONTROL CENTER

Bogen Sound Systems operate through a central unit. When used primarily for intercommunication it acts as a switchboard (there are 90 separate intercom connections on the SCH 90 below)—when amplifying speeches and music the Control Center resembles a radio control room. In most instances program sources and the amplifiers (the heart of any Sound System) are housed in this Bogen Control Center.

The School Console

Large consoles, such as this Bogen SCH 90 (built-in radio, record player, plus 1-way or 2-way communication with 90 stations) are designed and constructed by Bogen's Custom Division to do the exact job you want them to do. Used mostly in schools, modular design makes enlargement of the console, to handle added functions, a simple task.

Table Model Control

This TM 40 is a typical Bogen table-top console combining 3-speed phono, radio tuner and 40-room intercommunication switch panel. Wonderful for smaller schools (also available for 10, 20, or 30 rooms) and for busy offices, you can order this Bogen unit direct from our stock.

"Rack-Type" Control Center

Through use of vertical racks, the Bogen Custom Division can mount record player or changer, a radio tuner, intercom-control, tape recorder, amplifiers and preamplifiers, and even a clock-operated signal in a space-saving arrangement. Your Bogen Sound Distributor can help you decide what type of Control Center will be best for your particular job.

Amplifier Control

You would use a basic amplifier like this Bogen J330Y in cases where area selection is not needed, but magnificent control and amplification are vital. Bogen is by far the world's largest manufacturer of "packaged" public address equipment of this type. Models are available in a wide range of power and control, for portable or fixed-mount use.

...IT CAN BE DONE WITH THESE BASIC BOGEN INGREDIENTS

THE "REMOTE" STATIONS

Loudspeakers, with or without return-call and inter-com can be located wherever needed. They may be concealed behind cloth or grille in your wall or ceiling; they may be in rust-proof "trumpet" form for outdoor use. Bogen can also supply decorative speaker fixtures like the one shown below.

"One-Way" Communication

This handsome Bogen speaker-only fixture includes an acoustically designed enclosure for flush mounting into typical acoustical ceilings.

"Two-Way" Communication: Mike-and-Speaker Plus Switch

This station serves as both microphone and speaker, with separate Bogen conversation control switch installed near the user's desk.

"Two-Way" Communication Speaker Plus Handset

The user can have complete privacy while listening and speaking when he replies to a call with the Bogen handset. In cases where no paging is needed, the handset with a buzzer replaces the speaker.

Can you solve your sound problem with "PACKAGED" equipment?

Bogen has long been the world's leading supplier of "Packaged" sound equipment (that is, amplifiers, tuners, etc. available as stock units). It was to manufacture public address amplifiers of this type that the Bogen Company began operation in 1932. Since then Bogen has initiated numerous significant innovations – such as the famous anti-feedback control. Further reason for Bogen success – our painstaking quality control procedures, unequaled in the industry.

The skilled and experienced Bogen Sound Distributor in your community is happy to demonstrate how your sound problems can be solved using economical, dependable "packaged" Bogen components.

BOGEN'S custom division can help you design and install a flawless sound system

There are applications which require the design of special equipment. For this purpose Bogen maintains a Custom Division, employing a large staff of trained and experienced Sound Engineers and complete production facilities.

All our Custom Division needs is a fairly accurate statement as to what you want your Bogen Sound System to do. (Our local Bogen Sound Distributor will work closely with you in preparing this data.) From this our engineers design your installation, combining basic Bogen units into the most dependable sound systems you can possibly buy.

Before any product is shipped from the Bogen factory, all component parts and the assembly are checked for perfect performance.

The quality of the work of our Custom Division is attested to by client names: Remington Rand, Sylvania Electric, Beech Nut Packing Co., The U. S. Military Academy at West Point, the Metropolitan Opera House, Macy's–New York, and many other distinguished institutions.

How Bogen sound facilities will distinguish every modern home...

be sure to include a Bogen home entertainment center

According to leading architects, the majority of $30,000-plus homes they design include provision for a home entertainment center—a central location where high-fidelity records, radio and TV can be enjoyed by the family. Even builders of development homes are advertising: "with room for built-in high fidelity . . ."

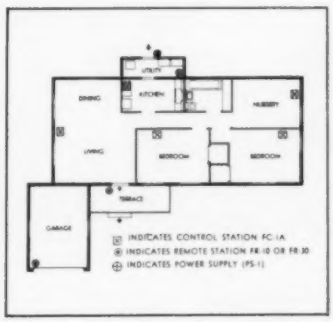
As a representative of the leading manufacturer of custom high-fidelity components, your Bogen Sound Distributor is happy to help you with solutions to acoustical and space problems. Bogen tuners, record players, preamplifiers, amplifiers, and speakers are available in chassis form for space-saving built-in installation. (Your Bogen Distributor also has TV chassis to play through the high-fidelity amplifier and speaker system.)

To get your copy of our 56-page booklet, "Understanding High Fidelity," and a free catalog of all Bogen hi-fi equipment, check the coupon.

add the safety and convenience of Bogen home Communo-Phones

The modern home can have its spaciousness—without tedious long-distance walking and shouting. Tie the front door, the kitchen, the baby's nursery, the den, the master bedroom together with an easy-to-install, economical Bogen Home Communo-Phone System.

One or more Central Control Stations, complete with built-in Speaker-Microphone, Selector Switch, Talk-Listen Lever and Volume Control mount flush into the wall wherever facility to originate calls is required. Weatherproof remote stations can be located at doors, in the garage, the basement—anywhere selective origination of calls is not required. (The diagram below shows a typical Bogen Home Communo-Phone single floor system.)



When the system is not in use it draws practically no current. A switch shuts off the system when the house is closed.

Check the Bogen Reader Service Form on the back page of this section for a brochure describing Bogen Deluxe Home Communo-Phones.

handsome, versatile Communo-Phones by Bogen solve any office intercommunication problem

Eliminate wasted steps, snarled switchboards, shouting-back-and-forth in your next office project. Busy executives are just a finger-tip apart with Bogen's handsome X Series Deluxe Communo-Phones.

In addition to their sleek good looks (the cabinets are of gray steel with green grille), simple installation and pushbutton station selectors, the X Series provides Bogen's exclusive Busy Signal. If the user calls a man whose station is busy, a light tells him so. When the light glows steadily the other fellow is talking – as soon as it flickers the user knows that the man is listening, can *break in if his own call is urgent!*

Bogen can help you become an expert in sound system applications

It is the increasing awareness of the hundreds of functions of sound on the part of your prospects that makes Bogen's many services so valuable to you. As you have seen, Bogen makes available dependable and economical Sound Equipment for every type of building. In addition, the skillful spec' writing, installation counsel and practical experience of our Distributors, and the unique engineering and manufacturing skills of our Bogen Factory Custom Division, are at your service. This combination of Product, Field Service, and Factory Service, working closely with you on every project, assures your customer a Sound System that will serve him for decades to come.

Your local Bogen Sound Distributor will be happy to tell you a lot more about how the Bogen organization will work on your team. He has all the booklets, brochures and catalogs shown below. Or, check your building types on the Bogen Reader Service Form and mail it to Bogen today.

Bogen

SOUND SYSTEMS

(tear out at dotted line)

BOGEN READER SERVICE FORM

TO: DAVID BOGEN CO., Inc., Dept. 38, 29 Ninth Avenue, N. Y. 14, N. Y.

GENTLEMEN: Please send me complete descriptive literature on Bogen Sound Systems in the categories checked below.

SOUND FOR THE SCHOOL

☐ 12 page, profusely illustrated and diagrammed catalog of Bogen Centralized School Sound Systems. (Also on file in your Sweets Catalog Service–32a/Bo.)

INTERCOMMUNICATION SYSTEMS FOR THE OFFICE, RESTAURANT, STORE

☐ 6 page brochure describes Bogen's Deluxe Office Communo-Phone Systems.

☐ Folder describes the Bogen "Twin" Communo-Phones, the desk intercom that requires no wiring.

SOUND FOR INDUSTRY, RETAIL, HOTELS, STADIA

☐ "What You Should Know About Sound Systems": 24 pages of fundamentals written by Bogen and McGraw-Hill editors reprinted from "Electrical Construction and Maintenance."

☐ 20 page catalog with photos and descriptions of scores of microphones, baffles, loudspeakers, amplifiers, turntables, paging systems, Control Center Racks, portable public address systems available from Bogen's "Packaged" Sound System line.

SOUND FOR THE HOME

☐ 56 page book written and published by Bogen to familiarize you with the theory and practice of high fidelity. (Sells to the consumer for 25¢–but free to the architect.)

☐ 20 page brochure describes Bogen's complete line of high fidelity equipment.

☐ 4 page illustrated folder cataloguing Bogen Deluxe Home Communo-Phones.

OTHER SERVICES REQUESTED

☐ Please send name of my nearest Bogen Sound Distributor

☐ Please have my nearest Bogen Sound Distributor call me for an appointment.

☐ Please send me ( ) extra copies of this "8 Page Guide to Bogen Sound Systems"

FIRM NAME _____ ADDRESS _____

CITY _____ ZONE _____ STATE _____ SIGNED _____ TITLE _____

EXCLUSIVE!

Wheeling Engineered Metal Lath Package

...GUARANTEES True, Flat, Rigid Metal Lath ON DELIVERY!

Flat, rigid Wheeling Metal Lath is easier to handle, goes up faster. Makes an ideal plaster base because of its definite keying action.

Metal Lath for Strength . . .
Plaster for Beauty!

● As a result of Wheeling's greater packaging care lath arrives at job-site in perfect condition, perfectly rectangular with true 90° corners. It's rigid and flat, no buckling, no fishtailing. Men can work faster, better. And because selvage is held to a minimum there are no overlapping bulges so plaster takes better.

Only Wheeling Metal Lath comes packaged this exclusive way: 500 sheets in sturdy lifts of 50 10-sheet bundles. It's packaged for easy handling, stenciled for immediate identification, tagged for surer counting and banded to insure arrival in perfect condition.

Specify Wheeling Metal Lath next time you want superior lathing for superior plastering. It's the best start for the best finish.

The full line of Wheeling Building Products includes Metal Lath and Accessories, SOFTITE Cop-R-Loy Galvanized Sheets, Steelcrete Reinforcing Mesh, Steelcrete Bank Vault Reinforcing, Expanded Metal, ExM Gratings, ExM Angle Frame Partitions and Tri-Rib Steel Roof Deck.

WHEELING CORRUGATING COMPANY • BUILDING MATERIALS DIVISION
WHEELING, WEST VIRGINIA

ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT HOUSTON KANSAS CITY
LOUISVILLE MINNEAPOLIS NEW ORLEANS NEW YORK PHILADELPHIA RICHMOND ST. LOUIS

Wheeling

THE RECORD REPORTS: CONSTRUCTION COST INDEXES

Labor and Materials — **U. S. average 1926–1929 = 100**

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
1952	278.2	274.8	271.9	274.9	271.8
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
1955	293.1	286.0	300.0	308.3	302.4
Nov. 1955	298.6	291.2	306.4	314.6	309.3
Dec. 1955	299.1	291.7	307.9	316.3	311.3
Jan. 1956	303.0	293.7	312.1	321.8	316.1
	% increase over 1939				
Jan. 1956	145.3	140.0	138.7	141.2	143.0

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.3	224.6	221.3	221.8	223.0
1954	219.6	219.1	223.5	225.2	225.4
1955	225.3	225.1	229.0	231.5	231.8
Nov. 1955	229.8	229.2	233.6	235.9	236.3
Dec. 1955	230.8	230.1	235.3	238.2	237.2
Jan. 1956	231.2	230.3	235.9	239.0	237.8
	% increase over 1939				
Jan. 1956	167.9	177.1	148.1	145.4	151.1

ST. LOUIS

1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.6	259.2
1954	266.6	260.2	263.7	273.3	266.2
1955	273.3	266.5	272.2	281.3	276.5
Nov. 1955	277.1	269.9	276.3	284.3	281.3
Dec. 1955	278.3	270.8	278.1	286.9	282.5
Jan. 1956	285.1	276.3	285.5	297.0	289.4
	% increase over 1939				
Jan. 1956	158.7	158.2	140.5	147.9	143.2

SAN FRANCISCO

1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.6	259.7
1954	257.4	249.2	264.1	272.5	267.2
1955	268.0	259.6	275.0	284.4	279.6
Nov. 1955	272.3	263.9	280.5	289.3	285.9
Dec. 1955	272.7	264.3	281.0	289.7	286.3
Jan. 1956	272.7	264.3	281.0	289.7	286.3
	% increase over 1939				
Jan. 1956	158.2	166.2	139.4	137.7	145.8

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

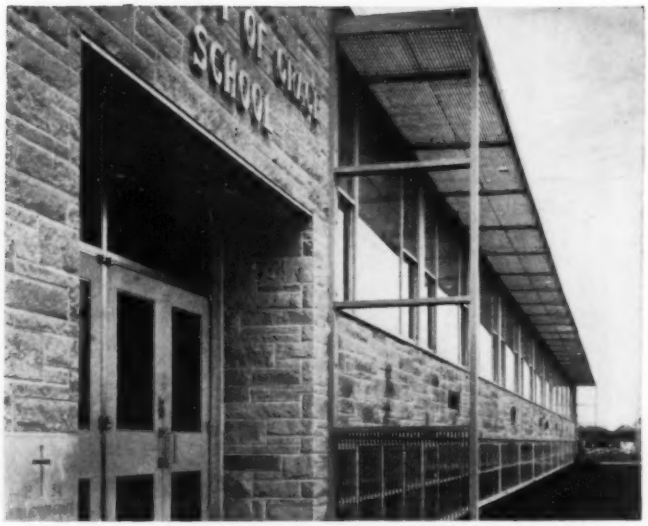
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

BORDEN *first* IN FLOOR GRATING

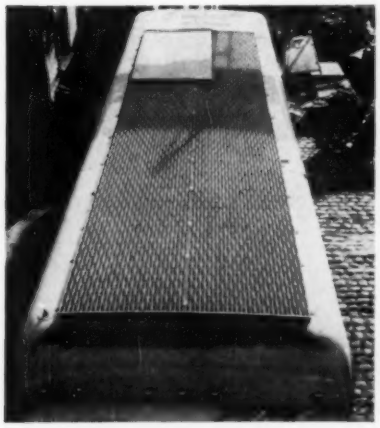
NEW USES OF GRATING . . . WHERE ONLY BORDEN QUALITY WOULD DO . . .

Here on this page are a few of the many new uses for grating being pioneered every day. Each is an exacting job where only standards of quality equal to BORDEN'S will do.

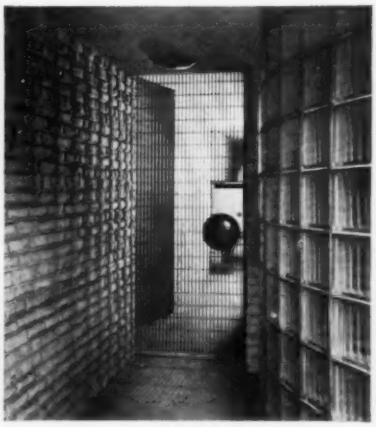
And remember . . . BORDEN manufactures every type grating in ferrous and non-ferrous metals.



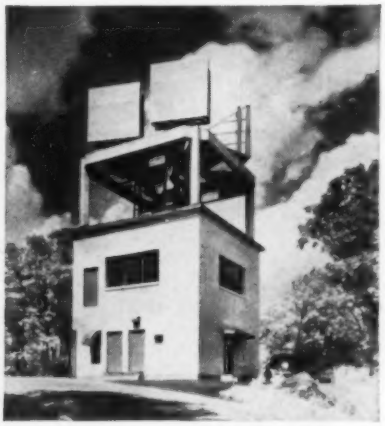
Light aluminum grating for SUN SHADES on buildings is in perfect harmony with modern design—allows 80% passage of light and air without the accompanying penetrating rays of the sun.



Wherever this Color Television truck goes, whatever the assignment of the reporters who must mount its roof, BORDEN riveted *serra-crimp* grating will mean surerfooting —even in ice or snow.



Only the finest precision manufacturing would satisfy the architect who designed this door. BORDEN is recognized as a leader in quality, custom-manufactured gratings.



Television relay stations and radar stations that gird our continent have adopted grating as standard outside platform material. It will not collect snow as most other platforms will.

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information on BORDEN
All/Weld, Pressure Locked, and Riveted Floor
Gratings in this FREE 8-page catalog

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SOUTHERN PLANT—LEEDS, ALA. — MAIN PLANT—UNION, N. J.

BORDEN METAL PRODUCTS CO. W-S

Gentlemen:

Please send me BORDEN Catalog

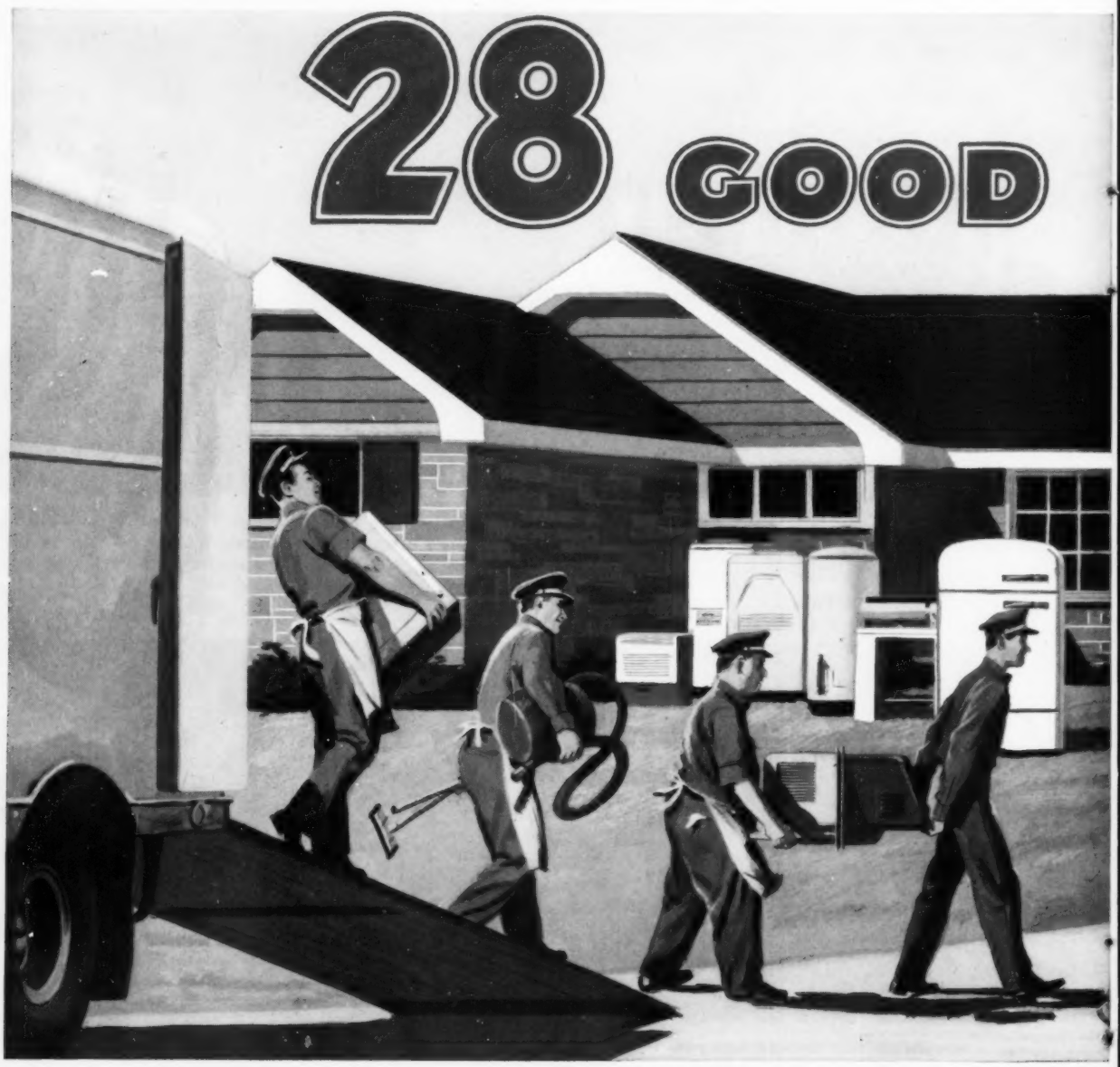
NAME .....

TITLE .....

COMPANY NAME .....

ST. AND NO. .....

CITY AND STATE .....



...why you've got

What will happen when Mrs. New Homeowner plugs in all these electrical appliances? Will she suddenly find her modern home *not* as up to date as she thought?

Throughout the country, millions of homeowners are discovering an important fact–*home wiring must be able to handle the multitude of appliances they use today*. What's more, provisions must be made for the many *more* appliances they plan to install tomorrow!

No doubt about it – the *wiring* in a home should be planned as carefully as the rest of the house! A 3-wire service entrance of *at least* 100 amperes capacity, wires large enough to carry full, healthy loads of electricity, plenty of circuits and an abundance of outlets – all these are vital

to plan for power!

to the homes of today.

Plan *your* homes with power in mind – with emphasis on sound, adequate wiring all through the house. You'll make your homes easier to sell; you'll add to your reputation as a designer of *quality* homes!

Free Home Wiring Wall Chart! Send today for Kennecott's handy wall chart showing typical home circuit loads. Use it as a check list when planning home electrical systems. For your copy, write Kennecott Copper Corporation, Dept. AR46, 161 East 42nd St., New York 17, N. Y.

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Fabricating Subsidiaries: CHASE BRASS & COPPER CO. • KENNECOTT WIRE & CABLE CO.

Frank Lloyd Wright discusses . . .

AN AMERICAN ARCHITECTURE: Frank Lloyd Wright. Edited by Edgar Kaufmann. Horizon Press (New York) 1955.

BY ALINE B. SAARINEN

IT TOOK THIRTY YEARS before America recognized Frank Lloyd Wright as a great man. Now he has fame, admiration, adulation, high TV appeal and a host of rather superficial followers. But the astonishing fact remains that he has had very little influence on the best architects or the best architecture of following generations.

One explanation is that his contribution is so formidably personal that although it may invite imitation, which is a specific and superficial thing, it cannot exert influence, which is a general and creative one.

But this is to confuse effects with principles. Wright's *style* is indeed personal and with many idiosyncracies. It is personal and grandiose and audacious, often even rude, as is Michelangelo's sculpture. The attempt to follow Michelangelo's style led only to imitation of his effects and thus to virtually nothing. But the development of Michelangelo's principles led, in large measure, to the dynamic sculpture of the Baroque. As Wright himself says: "No man's work need resemble mine. If he understands the working of the principles behind the effects he sees here, with similiar integrity he will have his own way of building."

Another explanation for Wright's lack of influence is that because he does not share the prevailing preference for what Dean Hudnut in a brilliant article recently called the purist or "Engineer's Esthetic," * he is not sympathetic to younger architects. But this assumes that because he does not subscribe to the "Engineer's Esthetic," nor believe dogmatically in the expression of structure carried to its ultimate conclusion, he is unaware of and disinterested in its challenges.

To hold this view is, I believe, to admit a nearsighted view of his work. It is also, more tragically, to admit that the vision of architecture has become so threadbare it can recognize the acceptance of these challenges only in the most limited and conventional terms.

All of which is, perhaps, a long-winded way of saying that Wright's basic principles are, in a profound sense, very little understood. If they are visually lost for many in the overwhelming forcefulness of his personal style, they are intellectually lost for others in the exuberant, repetitious and often extraneous muchness of his writings.

What Edgar Kaufmann has undertaken in this volume, then, seems to me to fulfill an important need. He has, in a sense, panned away the gravel and delivered only the gleaming, golden nuggets. For he has extracted from Wright's voluminous writings, speeches and interviews, what he considered the most succinct, trenchant and yet colorful of the architect's statements on the general and the particular. He has then ordered these statements into meaningful groupings

(*Continued on page 66*)

* ARCHITECTURAL RECORD, *Jan. 1956, pp 139–146.*

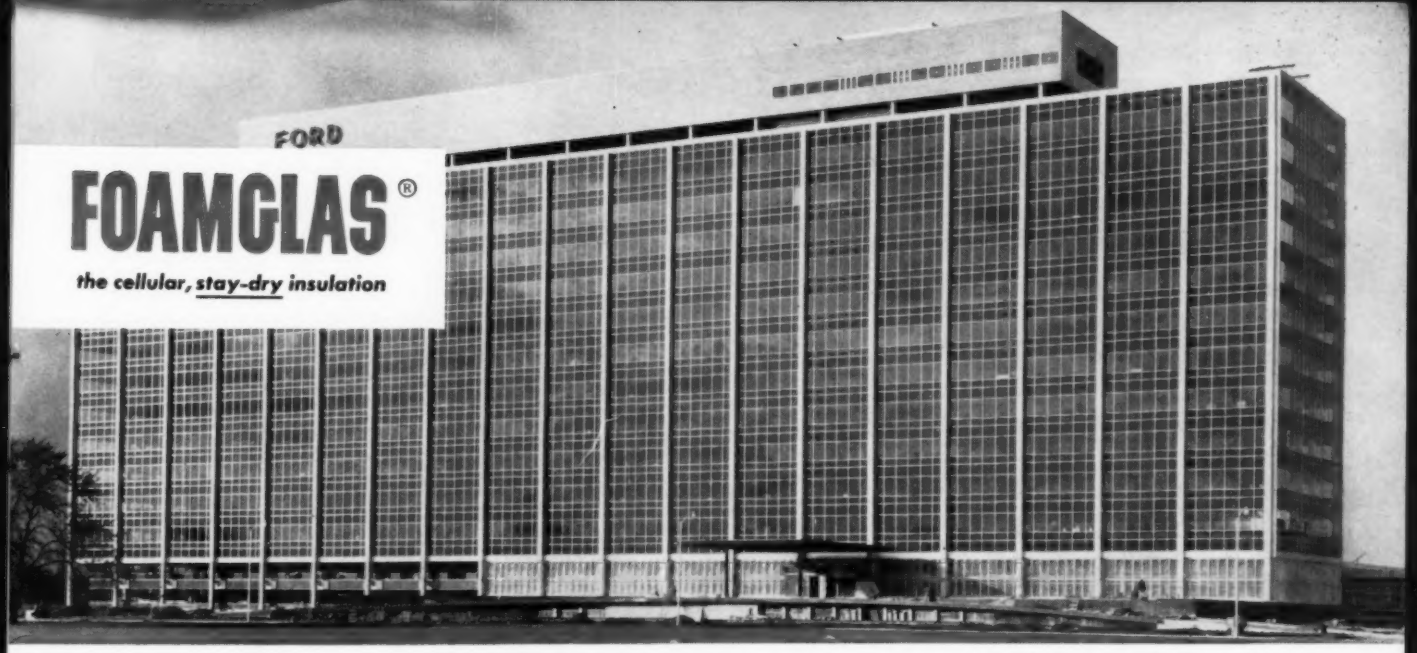
BUILDER OF GREAT BRIDGES

Robert Maillart. By Max Bill. Verlag Girsberger (Zurich) 1955. 184 pp, illus. American distributor: George Wittenborn & Co. New York City, N. Y.

In the January 1st, 1938 issue of "Schweizerische Bauzeitung," Robert Maillart, the late Swiss engineer, wrote, "Reinforced concrete does not grow like wood, is not rolled like steel, and has no joints like masonry. It is most easily compared with cast iron as a material cast in forms, and perhaps we can learn something directly from the slowly discovered cast iron forms regarding the avoidance of rigidity in form by a fluid continuity between the members that serve different functions. The condition of this beautiful continuity is the conception of the structure as a whole."

This attitude toward the materials and their use was largely responsible for perhaps the most beautiful structures of their kind ever built. Conceiving structures in a completed sense rather than an assembly of components was the prime factor on attaining this success. This can be seen in Maillart's bridges where the roadways or railways are an integral part of the structure rather than

(*Continued on page 66*)



FOAMGLAS®

the cellular, stay-dry insulation

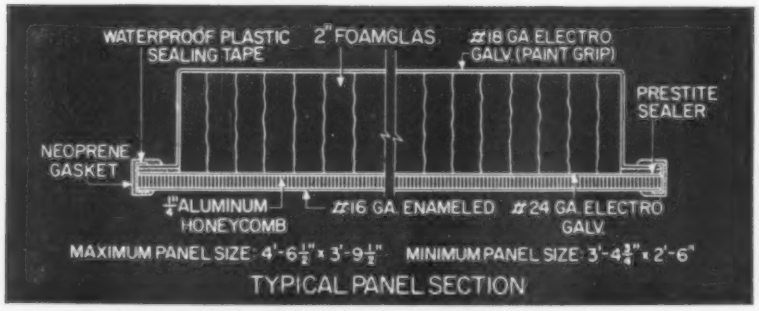
FOAMGLAS-porcelain panels give FORD durable curtain walls with constant U-value

As up-to-the-minute as the Ford family of fine cars . . . the Ford Motor Company's new $30,000,000 Central Staff Office Building at Dearborn, Michigan, demonstrates the functional simplicity of design possible with curtain wall construction. An integral feature of the 6,616 prefabricated porcelain enamel curtain-wall panels is the 2" insulating core of FOAMGLAS to provide vital structural and thermal benefits.

Since FOAMGLAS is impervious to moisture, insulating value remains unchanged under all weather conditions. Ford can count on a constant U-factor of 0.15 for the finished panels. What's more, FOAMGLAS is completely inorganic, dimensionally stable and will not deteriorate in service. It's fireproof, too, for extra building safety.

With a compressive strength of over 7 tons per sq. ft., FOAMGLAS withstood all laminating pressures required to make each panel a sound structural unit. Its light yet rigid structure helped strengthen the finished units while weight was held to just 7½ lbs. per sq. ft.

Each panel unit was inserted in a preformed rabbet in the building's aluminum grid frame. An aluminum stop moulding was then screwed into the frame and topped with a cover moulding. Panels were installed at the rate of 4 per hour for **a final erected cost of only $4.25 per sq. ft.**



Architects: Skidmore, Owings & Merrill, A. I. A., New York, N.Y.
Consulting Engineers: Jaros, Baum & Bolles, Inc., New York, N. Y.
General Contractor: Bryant & Detwiler Co., Detroit, Mich.
Panel Manufacturer: Ingram-Richardson Mfg. Co., Beaver Falls, Pa.

Ford also took full advantage of the outstanding insulating performance of FOAMGLAS by using it to insulate all roof areas and exterior columns in the new building. Whatever **your own** insulating problems, it will pay you to send today for detailed literature on the use of cellular, **stay-dry** FOAMGLAS . . . the strong inorganic insulation for panels, roofs, ceilings, walls, floors, piping or equipment. Write us, specifying your insulating problems. Address:

Pittsburgh Corning Corporation
Department B-46, One Gateway Center
Pittsburgh 22, Pennsylvania
In Canada: 57 Bloor St. W., Toronto, Ontario

Insulite Roof Deck design outsells others 3 to 1 in New Jersey project

Homes designed with Insulite Roof Deck are outselling all others in the Mountainside Park project. "Out-selling them three to one," reports Mr. Lester Robbins, president of the Robbins Co., Union, N. J., the builders.

Insulite Roof Deck displays quality and beauty to the prospective home purchasers. The white, pre-finished underside adds to the "cathedral" effect. See, at left, how Insulite Roof Deck contributes to the free and open look the architect, the late Sam Glaberson, A.I.A., wanted in this exposed beam ceiling.

All over the country builders report Insulite Roof Deck reduces costs $80 to $300 per home. Goes up fast. Roof Deck is three products in one. A single operation does three jobs. Send for pictures and construction details now! Write Insulite, Minneapolis 2, Minnesota.

It's insulation with vapor barrier. No need for other insulation. 2″ Roof Deck is comparable to 2″ wood deck plus 1″ fiberboard insulation. Available in 3 thicknesses to meet insulation requirements in any climate. Exclusive resilient gasket seal and vapor barrier membrane protect against condensation within the unit.

It's roof deck —2′ x 8′ units cut application time as much as 45%. Only one material to handle. New Insulite Roof Deck eliminates need for separate roof boards, insulation, lath and plaster and ceiling finishing. Insulite Roof Deck can save 12 man hours per 1000 sq. ft. of surface compared with 2″ x 6″ D&M roof sheathing.

And finished ceiling —The underside of Insulite Roof Deck is finished with flame-resistant surface. Lay Roof Deck over pre-finished beams . . . and ceiling is done. No need to plaster, paint, stain, wax. Cuts labor and material costs. In 2′ x 8′ units, 1½″, 2″, or 3″ thick—with or without vapor barrier membrane (depending on climate).

build better and save with

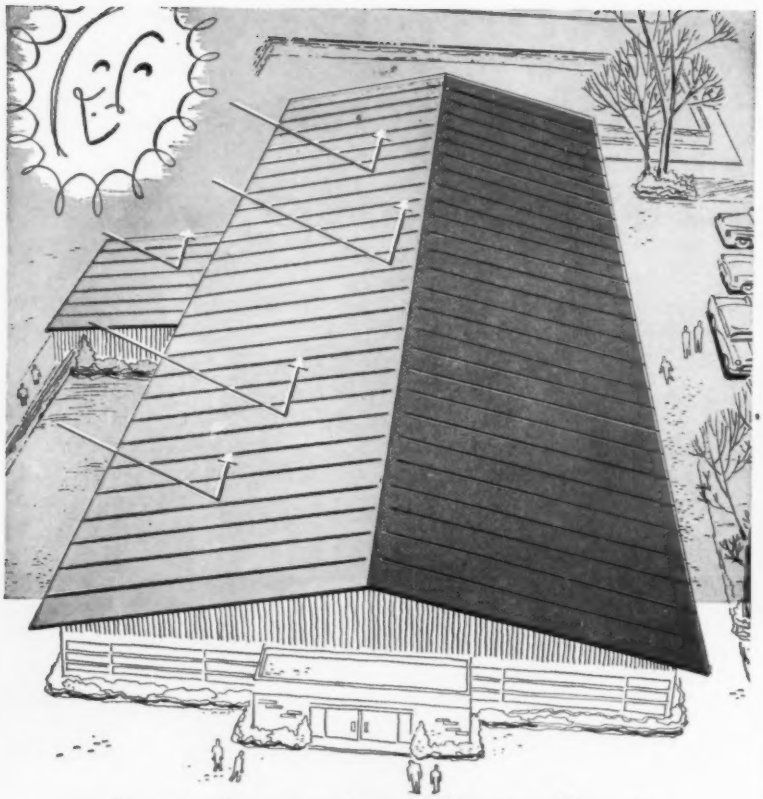
INSULITE

INSULITE IS A REGISTERED TRADE MARK

INSULITE, *Made of hardy Northern wood*

Insulite Division of Minnesota and Ontario Paper Company, Minneapolis 2, Minnesota

Architect, the late Sam Glaberson, A.I.A.



Some important facts about

REFLECTIVITY

and FOLLANSBEE TERNE

A National building magazine reported not long ago that a smooth, white-painted roof surface would reflect about 68% of the sun's heat compared with 5% by a dark roof. That's a much higher percentage of reflectivity than reported for any other kind of roof, painted or unpainted, metal or non-metal . . . *and, we think, a powerful sales story for Follansbee Terne Roofs.*

Smooth-surfaced, *long-lasting* Terne really holds paint—and Terne is the versatile roofing material that allows you to put design in the roof. With it, you can plan a flat surface and either horizontal or vertical shadow lines.

When you think of air conditioning for any building or house, remember the reflectivity of a white or light-colored Terne roof . . . remember its weight (only 77 pounds per square) . . . and specify Follansbee Terne, the proven roofing metal.

There are many other facts about Follansbee Terne you will want to know. Why not write for them today?

FOLLANSBEE

STEEL CORPORATION

FOLLANSBEE, WEST VIRGINIA

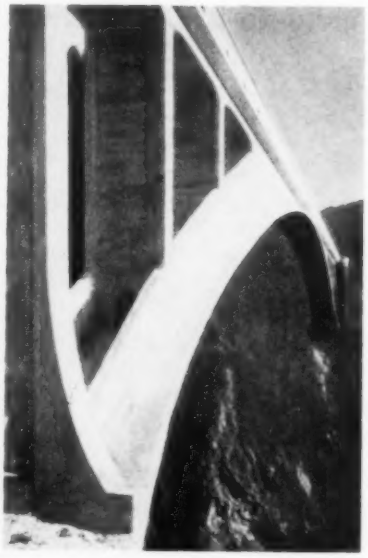
Cold Rolled Strip • Terne Roll Roofing • Polished Blue Sheets & Coils

Sales Offices in Principal Cities

REQUIRED READING

(Continued from page 62)

MAILLART



a supported load. In his buildings, columns, beams, and floors are all combined into a monolithic column with slab. Max Bill's book shows a love for his subject material uncommon in similar works. This, the second edition, contains several works that were omitted in the first edition. It is accompanied by excerpts of Maillart's writings and excellent photographs and drawings of his projects, both completed and uncompleted. Equal emphasis is made of Maillart, the Engineer and Maillart, the Artist. He is more than worthy of both titles. **John C. Martin**

WRIGHT

and illustrated them with examples of Wright's work. Thus this book becomes both an updating and a new organization of the somewhat similiar service performed by Frederick Guthiem's "On Architecture" of 1941. The job is so good that arguments about the particular selections, in which, of course, specialists and disciples will indulge, seem to seem to me to be mere carping.

The value of the book is, naturally, that the isolation of the statements gives them added clarity. The concept of technology being a means toward a liberation of space; the belief that the harmonious interrelation of parts must result not only in a solution but also in an expression; the insistence on the orderly growth and wholeness of a con-

(Continued on page 446)

Architects:
Wyatt C. Hedrick, Fort Worth, Texas
Bryan Miller, Oklahoma City, Oklahoma

Aluminum Panels Enameled by:
Ingram-Richardson Manufacturing Company
Beaver Falls, Pennsylvania

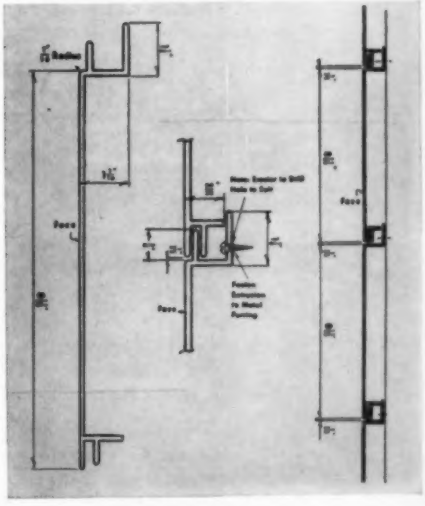
New Training Center uses unique panel system

. . . *of porcelain-enameled aluminum*

Modern building near Oklahoma City features aluminum extrusions with interlocking edges—basis of the panel system. (See diagram.) This construction assures rigidity for long extrusions that run up to 10 feet in height. All pieces may be attached to structural steel, eliminating the need for special channels or furring strips *—and no horizontal joints are required.*

Finished in Du Pont-developed Porcelain Enamel, these aluminum members are as attractive as they are durable. It's a good illustration of the many advantages of building with enameled aluminum. First, there's aluminum's light weight and strength. Next, the beauty of any one of an unlimited range of colors in Du Pont Porcelain Enamel.

Finally, you have the many *performance* benefits of this rugged enamel—it resists corrosion, abrasion, thermal shock and flexing. And enameled sheets can be sheared, sawed or punched with no exposure of the metal. We'll be glad to give you further information and put you in touch with enamelers. Just clip coupon below.



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for aluminum

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E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Dept., AR-4, Wilmington 98, Delaware

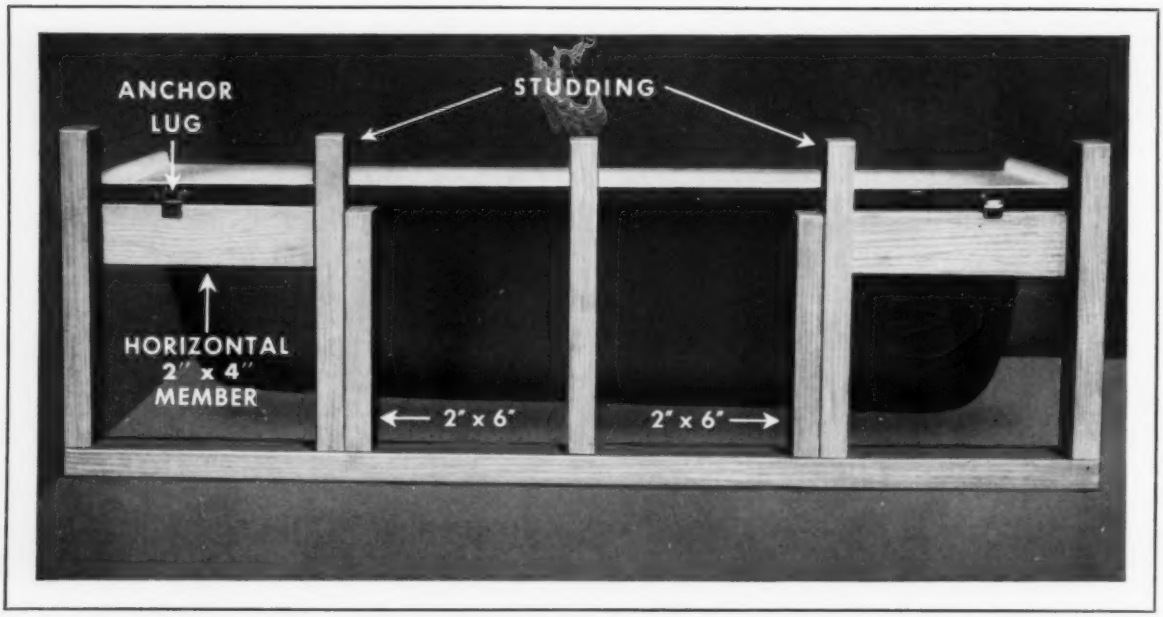
☐ **Please send me Technical Bulletin CP 4-454 and illustrated folder on Vitreous Enamel for Aluminum.**

☐ **Have your technical representative call with further details.**

*Name*_____ *Position*_____

*Firm*_____

*City*_____ *State*_____



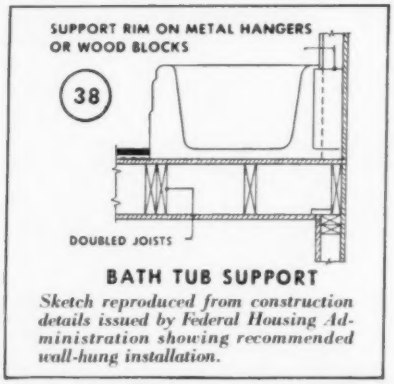
The AllianceWare Method of Bathtub Installation

Saves your Owners Future Headaches!

● Building authorities agree that the one method of installing a bathtub to minimize the effect of the shrinkage in lumber is to *hang the tub from the wall.*

Recognizing this method as one that also cuts installation costs, all AllianceWare tubs are equipped with anchor lugs designed to fasten over two horizontal supports nailed to the studding. This wall-hung method is fully protected by AllianceWare U. S. Patent No. 2237272 — a feature exclusive with AllianceWare. The back of the tub is held firmly against the wall line by means of the anchor lugs and is supported by the two 2" x 6" vertical members. The front of the tub is fully supported by the apron. At no time can the tub pull away from the wall, because the anchor lugs prevent shifting. This method eliminates the need for any other supporting devices.

Added to the advantages of this method is the AllianceWare tub-to-wall seal obtained from the integral flange that extends a full inch from the rim of the tub where it joins the wall. The AllianceWare wall-guard flange prevents water from seeping over the rim and damaging wall or floor behind the tub.



BATH TUB SUPPORT

Sketch reproduced from construction details issued by Federal Housing Administration showing recommended wall-hung installation.

ALLIANCEWARE, INC. • Alliance, Ohio

Bathtubs • Lavatories • Closets • Sinks

Plants in Alliance, Ohio; Colton, California; Kilgore, Texas

AllianceWare
PORCELAIN ON STEEL

For the Most in Mass-feeding Efficiency

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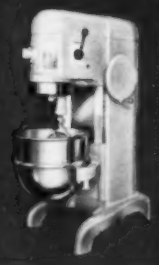
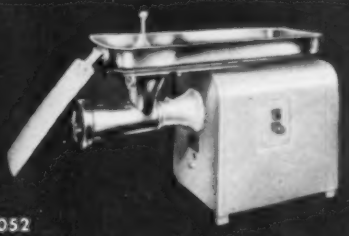
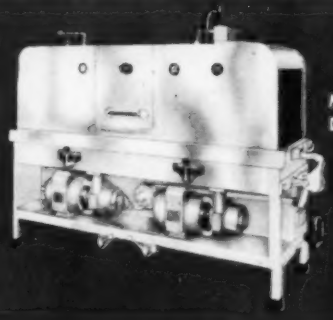


Model H-600
MIXER

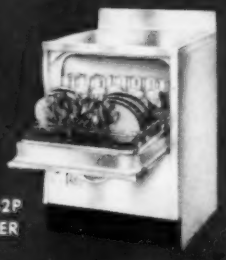
Model 400 STEAKMASTER



Model 4052
MEAT CHOPPER



Model XXM-4
DISHWASHER



Model UM-2P
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Model 84141 FOOD CUTTER

FOR MORE COMPLETE INFORMATION AS TO VARIETIES AND SIZES OF MACHINES—SEND FOR FREE SPECIFICATIONS AND BULLETINS

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THE COMPLETE HOBART LINE

Tenderizers	Peelers	Dish Scrappers
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THE PRODUCTS

No commercial kitchen is more efficient than its time and money saving installations of food, kitchen, bakery and dishwashing machines. In over half-a-century of field-tested experience, Hobart products have won a name for the utmost in design, manufacturing and performance standards—for year-after-year, day-in and day-out reliability. See Hobart—clean in design and clean in performance.

THE COMPLETE LINE

Specify Hobart—and consolidate planning, purchasing and service. Plan on the added economy of attachment interchangeability among Hobart products. Choose from the greatest range of products—in a wide range of capacities and sizes for utmost efficiency.

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All products carry the long-respected Hobart guarantee—backed by the most extensive sales and service organization in the industry. Local representation is important—they're as near as your phone . . .

The Hobart Manufacturing Company, Troy, Ohio.

Trademark of Quality Hobart for over 55 years

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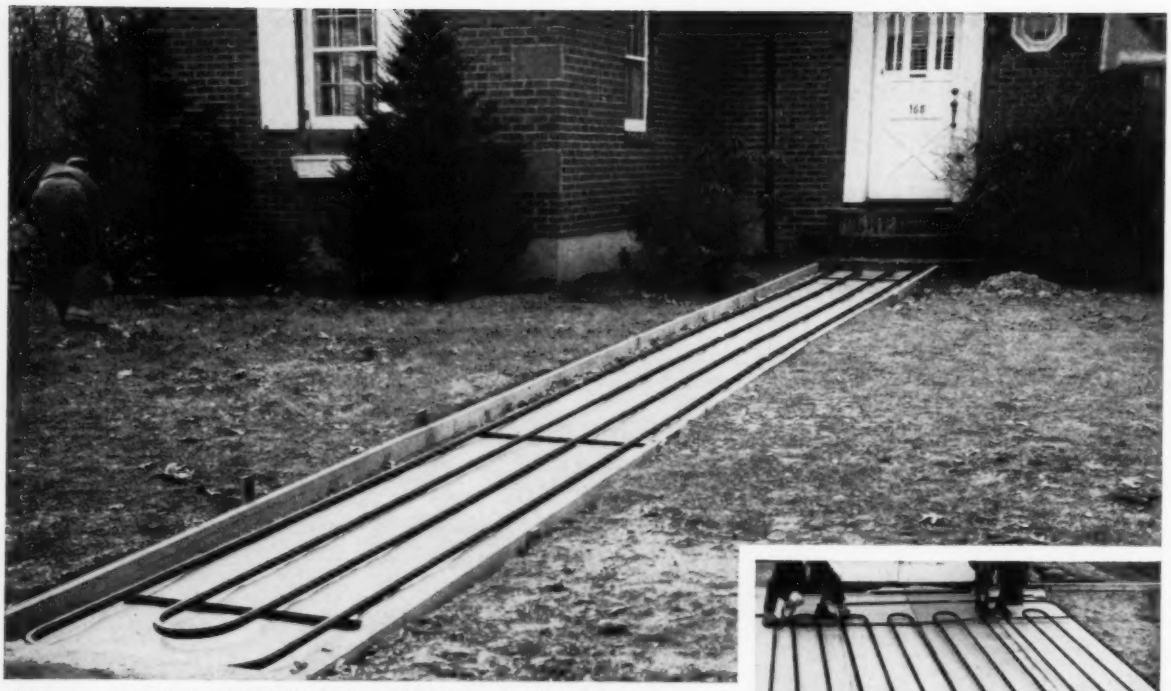
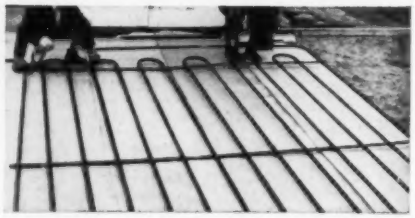
machines

The World's Largest Manufacturer of Food, Kitchen and Dishwashing Machines



Fabrication and installation: Atlantic Pipe Bending and Fabricating Co., Wood Ridge, New Jersey



Snow Melting System Eliminates Winter's Worst Hazards

This modern snow melting system installed with National Pipe is the answer to winter's age-old problem—ice and snow. Dangerous slips and falls on icy sidewalks are unfortunately common winter occurrences, and many a sore back or pulled muscle has resulted from over-indulgence in snow shoveling.

Snow melting systems have been found ideal for private residences, but have been used most effectively and to far greater advantage when installed around hotels, office buildings, churches, theaters, at shipping docks, bus terminals, and highway toll gates. Versatile snow-melting coils may be installed in walkways, ramps, driveways, loading platforms, and even in stairways.

The pipe to use for snow melting applications is USS NATIONAL Steel Pipe, since it possesses the inherent qualities of smooth, uniform bending; sound, strong welding; and long service life . . . qualities that have consistently made NATIONAL Pipe the largest selling pipe in America for snow melting service.

SEE The United States Steel Hour. Televised alternate weeks. Consult your local newspaper for time and station.

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.

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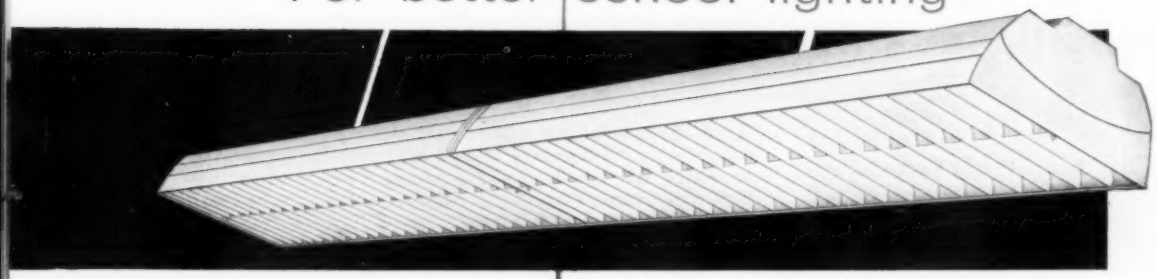
NATIONAL PIPE

UNITED STATES STEEL

For better school lighting --



The Lexington in their lives

Education used to be largely a matter of hearing and reciting. Today's children, however, learn by *seeing* and *doing*. The visual techniques of modern teaching demand the very best in classroom lighting. Good lighting is essential—to protect young eyes at work, to make the learning process more efficient, to create an atmosphere of cheerful cooperation between teacher and student. This is why architects and school authorities across the country have chosen the Miller "Lexington" as the standard of quality for contemporary classroom lighting.

If you have a new school in the planning stage, let us help you with expert advice and detailed information on the lighting best fitted to your needs.

PARTICIPATING IN SCHOOLROOM PROGRESS, U.S.A.

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SINCE 1844

Better Lighting for a Brighter America

THE MILLER COMPANY: GENERAL OFFICES, MERIDEN, CONN.
FACTORIES: UTICA, OHIO—MERIDEN, CONNECTICUT.
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Trouble and breakdowns can't hide
IN THIS SEVEN FOOT CONCRETE UTILITY TUNNEL

Lewis Flight Propulsion Laboratory of the National Advisory Committee for Aeronautics
Cleveland, Ohio

Contractor
Lombardo Bros. Construction Co.

These racks will carry power lines and utility cables to a supersonic wind tunnel of the Lewis Flight Propulsion Laboratory. Repairing line breaks, which could shut down an extremely important research project, will be an easy job. A man will walk right up to the trouble zone and go to work.

American Vitrified Products Company supplied several thousand feet of special order 78-inch concrete pipe for this project. Galvanized inserts were welded to the reinforcing steel in the pipe. Supporting brackets holding the cable racks are then bolted to the inserts.

American Vitrified Products Company is often called on for these complicated jobs. Our years of experience and technical know-how guarantee customer satisfaction.

Concrete pipe is just one of the many products we manufacture. We also produce the new Amvit Jointed Clay Pipe, flue liners—both glazed and unglazed, and clay liner plates.

For more information, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.

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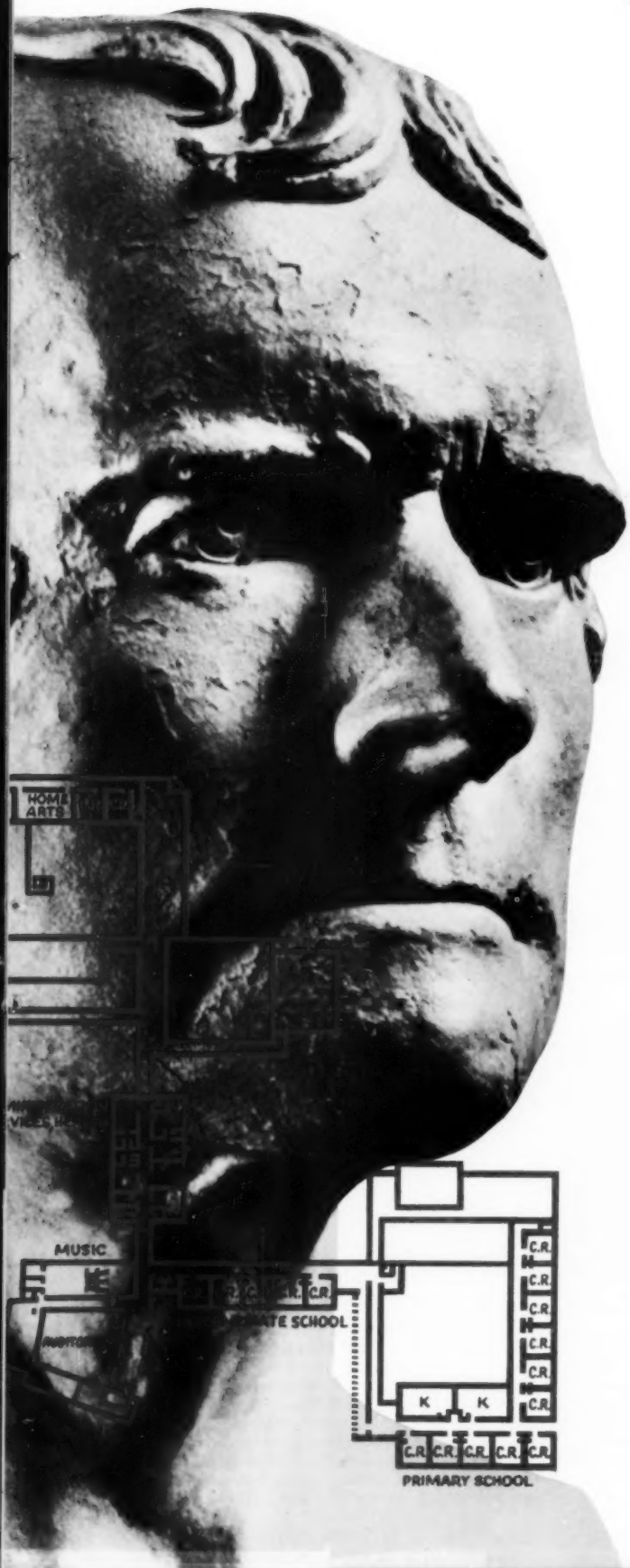
NEW DIRECTIONS IN AMERICAN ARCHITECTURE



Designing for MORE EFFICIENT SCHOOLS

"I would strongly recommend, instead of one immense building, to have a small one for every professorship, arranged at proper distances around a square, to admit of extensions, connected by a piazza, so that students may go dry from one school to another. The village form is preferable to a single great building for many reasons, particularly on account of fire, health, economy, peace and quiet."

—THOMAS JEFFERSON, 1816

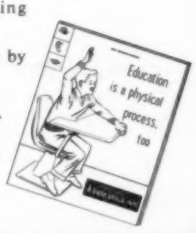
Now 139 years later, Jefferson's Plan is one of the many new trends in modern school design.

Among the numerous new plans for designing greater warmth and intimacy into American schools, the campus school layout is gaining considerable favor on architectural drawing boards all over the country.

It is interesting to note that although this "cluster plan" idea was first advanced by Thomas Jefferson over a century ago, it has come into common application only during the past few years. Since 1951, this "cluster plan" has demonstrated some inherent advantages:

1. Elimination of corridors, resulting in a high proportion of area for educational use.
2. General simplification of problems of grading, framing, ventilating, lighting, heating, etc. For example, natural lighting can be bi-lateral in almost every unit.
3. Local facilities for each building. No batteries of toilets or sinks.
4. Heating with residential-type forced warm air furnaces.
5. Breezeways utilized to full advantage.
6. Simple repetitive methods of building construction.
7. Expansion to meet future needs possible by simply adding clusters.

Write for the complete story of Fiberglas products for schools.



Fiberglas Design Portfolio — MODERN SCHOOLS

OTHER NEW TRENDS INCLUDE:

Double-purpose rooms. The same room serves as an auditorium (above) or a gymnasium (below).

Flexible classrooms for effective "group" teaching.

Rooms that simulate actual home conditions.

NEW SCHOOLS . . .

Since the first Fiberglas* products went into schools some fifteen years ago, we have been privileged to assist thousands of architects through our sales engineers in the field and through approved Fiberglas contractors.

The Fiberglas representative's knowledge of his product line—added to his understanding of architectural problems—makes him a valuable source of assistance for you.

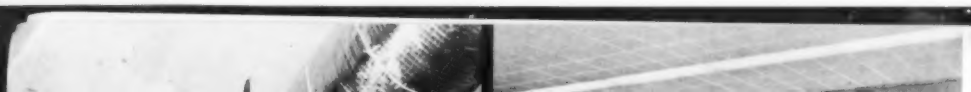
He can demonstrate, as we hope to do briefly on these pages, why Fiberglas products are an essential part of your design. In schools, especially, Fiberglas products go hand-in-hand with safety, comfort, *and* savings.

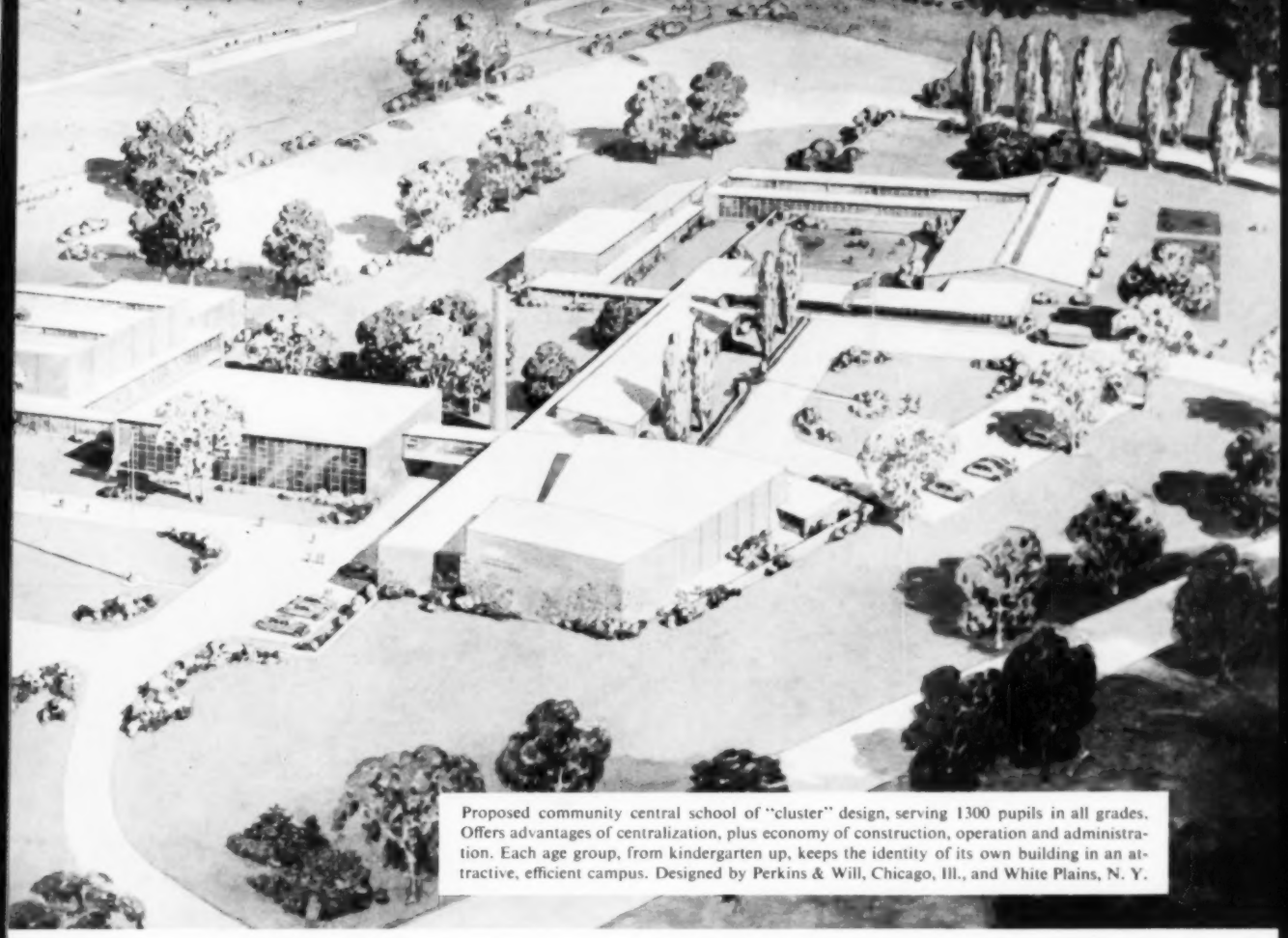
For Fiberglas materials, while competitive in price, offer a unique set of properties no other material possesses. First and foremost, they are durable and dimensionally stable, will never rot, absorb moisture or odors, or support vermin.

Let us give you *all* the facts about Fiberglas products for schools. Simply contact your nearest Fiberglas Branch Office, or write: Owens-Corning Fiberglas Corporation, Dept. 68-D, Toledo 1, Ohio.

Insulating school roofs . . . On flat or low-pitched roofs, ¾ inch of inorganic Fiberglas Roof Insulation does the same insulating job as a *full inch* of most other materials. Assures greater fuel savings in winter . . . cooler comfort in summer. So efficient only a minimum thickness is required. Easy to cut, easy to apply. Saves time and labor costs. For flashing, use extra strong, extra efficient Fiberglas membrane fabric. *See Sweet's Catalogue or write for RW6.A1.*

New kind of built-up roofing: Because it's reinforced *in every direction* with inorganic strands of glass that never rot, this Fiberglas* Built-Up Roofing is stronger, longer-lasting. Maintenance costs are reduced because it's so porous successive applications of hot bitumen *penetrate and bond together* into a solid reinforced roof. Special construction helps prevent blistering, surface cracking, alligatoring. *See Sweet's Catalogue or write for RW6.A5.*





Proposed community central school of "cluster" design, serving 1300 pupils in all grades. Offers advantages of centralization, plus economy of construction, operation and administration. Each age group, from kindergarten up, keeps the identity of its own building in an attractive, efficient campus. Designed by Perkins & Will, Chicago, Ill., and White Plains, N. Y.

and OWENS-CORNING FIBERGLAS*

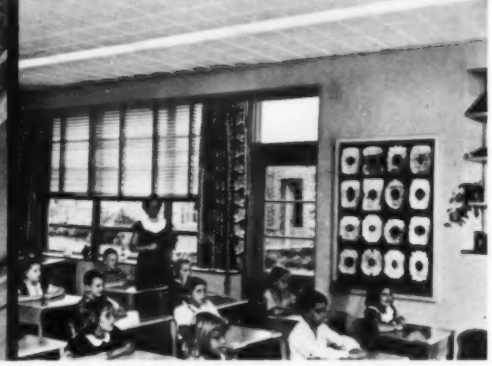
*T.M. Reg. U. S. Pat. Off.

*Fiberglas, Dust-Stop are trade marks (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corp.

. . . and walls: The curtain wall construction, so popular in today's schools and other buildings, demands an extra-efficient thermal insulation to provide adequate protection against heat and cold. Makers of aluminum, steel and porcelain-faced curtain wall panels choose Fiberglas PF Insulation as the core because it provides such a high degree of heat stopping efficiency in these thin wall sections. Fiberglas is easy and economical to fabricate—makes low-cost construction possible. Light in weight.

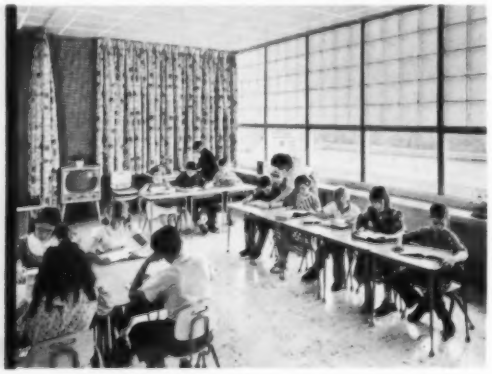
To banish noise . . . For quieting individual classrooms, corridors, cafeterias, or other school areas, Fiberglas Ceiling Board offers lowest cost suspended non-combustible acoustical ceiling. Large boards suspended on a metal T-grid system give an attractive acoustical ceiling installed for about the same cost as conventional *non*-acoustical ceiling. It's non-combustible. Gives bonus of added heat control. Wide selection of patterns. *See Sweet's Catalogue or write for AC6.A1.*

3 jobs at 1 low cost! For ceiling areas, Fiberglas Acoustical Form Board with gypsum deck construction offers extra advantages . . . and extra economies. It combines 3 extra-value features: (1) Permanent, dimensionally stable form board; (2) fire-safe acoustical ceiling (cuts noise and clatter up to 75%); and (3) highly efficient insulation for maximum year-round comfort. Low cost covers everything—form board, acoustical ceiling, and insulation. *See Sweet's Catalogue or write for RW6.A4.*



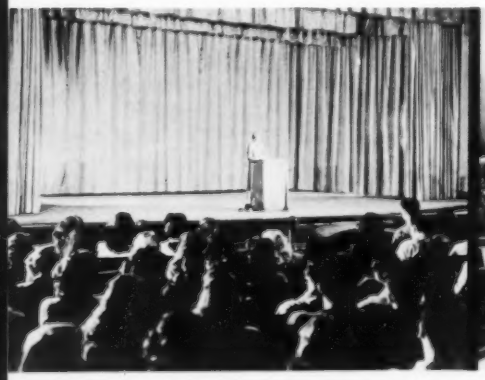
Heating and cooling: Fiberglas Duct Insulation cuts fuel costs, adds to comfort, and eliminates condensation problems when properly used on warm air and cool air ducts. Six different kinds—rigid or flexible, faced, sprayed, or uncoated. *See Sweet's Catalogue. Or write for IN6.A1.* For warm-air furnaces and air conditioning systems, Fiberglas Dust-Stop* Air Filters cut heating and cooling costs. They let warm air or cool air through, but keep dust, dirt and pollens out. *See Sweet's Catalogue or write for AR6.A1.*

For extra quiet . . . The attractive Fiberglas Acoustical ceiling in the schoolroom above comes in a complete range of textures, patterns and colors, and can be applied mechanically or with adhesive. It's long-lived—offers superior schoolroom quieting. Fire-safe and flame resistant—acceptable under codes requiring maximum degree of life safety from fire. Provides highest protection for school occupants. It's easily installed, easily cleaned, and even provides added thermal insulation. *See Sweet's Catalogue or write for ACCA.1.*



More comfortable furnishings: Special posture-fitting chairs—like the one above—add new comfort to new schoolrooms. Made of Fiberglas Reinforced Plastic, they are scientifically molded to fit youthful postures. Extra light, extra strong, and easy to clean. They come in a range of color tones to add distinctive brightness to the classroom. And they're tough enough to stand juvenile abuse of every variety without chipping, splintering, or scratching. *Write for descriptive literature.*

Draperies: The needs of school rooms are brightly handled by use of practical, beautiful Fiberglas fabrics. Fiberglas draperies are completely fire-safe. They save money, too, because they never need fireproofing. Sun-rot proof, they don't need lining—let natural light in for comfortable desk work while harsh sun rays are blocked. Because fibers of glass can't absorb dirt, Fiberglas fabrics wash quickly and easily with just soap and water. *Write for descriptive literature.*



Fire-safe stage curtains: For school use, stage curtains must pass the strictest fire regulations . . . and Fiberglas coated fabric curtains are permanently fire-safe. They never need flame-proofing! What's more, Fiberglas curtains are comparable in their low cost to other fabrics used for this purpose. They're hard to soil—easy to wash! In addition, they provide long, maintenance-free service, thus making their cost per year of use exceptionally low. *Write for further information.*

Sidelights, skylights, and screening: The colorful, translucent Fiberglas Reinforced Paneling—used as roof and wind screen—cuts maintenance costs because it's breakproof and shatterproof. Another Fiberglas product—Fiberglas Screening—is ideal for school use because it's the strongest screening made. It withstands all kinds of abuse. Won't corrode, stain, shrink or stretch. And it never needs painting! Can be left up all year round. *Write for PR6.A2.*

Life mask of Jefferson from New York State Historical Association, Cooperstown, N.Y.

OWENS-CORNING

FIBERGLAS

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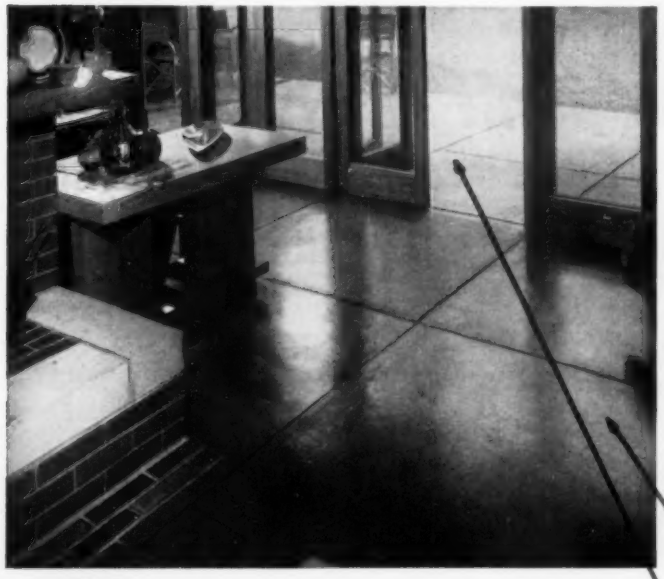
Home of Mrs. I. Zimmerman, Manchester, N. H.
Designed by Frank Lloyd Wright



From the first rough sketches . . .

Frank Lloyd Wright specified Colorundum floors for their warmth of color and beauty."

Mrs. I. Zimmerman, Manchester, N. H.

"Look at these photographs of our exciting new home and you can see why we just wouldn't consider drab, colorless concrete. From the first rough sketches," writes Mrs. Zimmerman, "we planned attractive, luxurious Colorundum for the patio and the service areas . . . especially when we found out how little it cost!"

Colorundum is the ideal solution to the problem of exposed or uncarpeted areas of plain concrete. It provides colorful, wear-resistant floors at just a fraction of the cost of tile.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, metal or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.

Fused color. Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.

A Subsidiary of *Chemical Corporation*

A. C. Horn Co., Inc.

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A. C. Horn Co., Inc.
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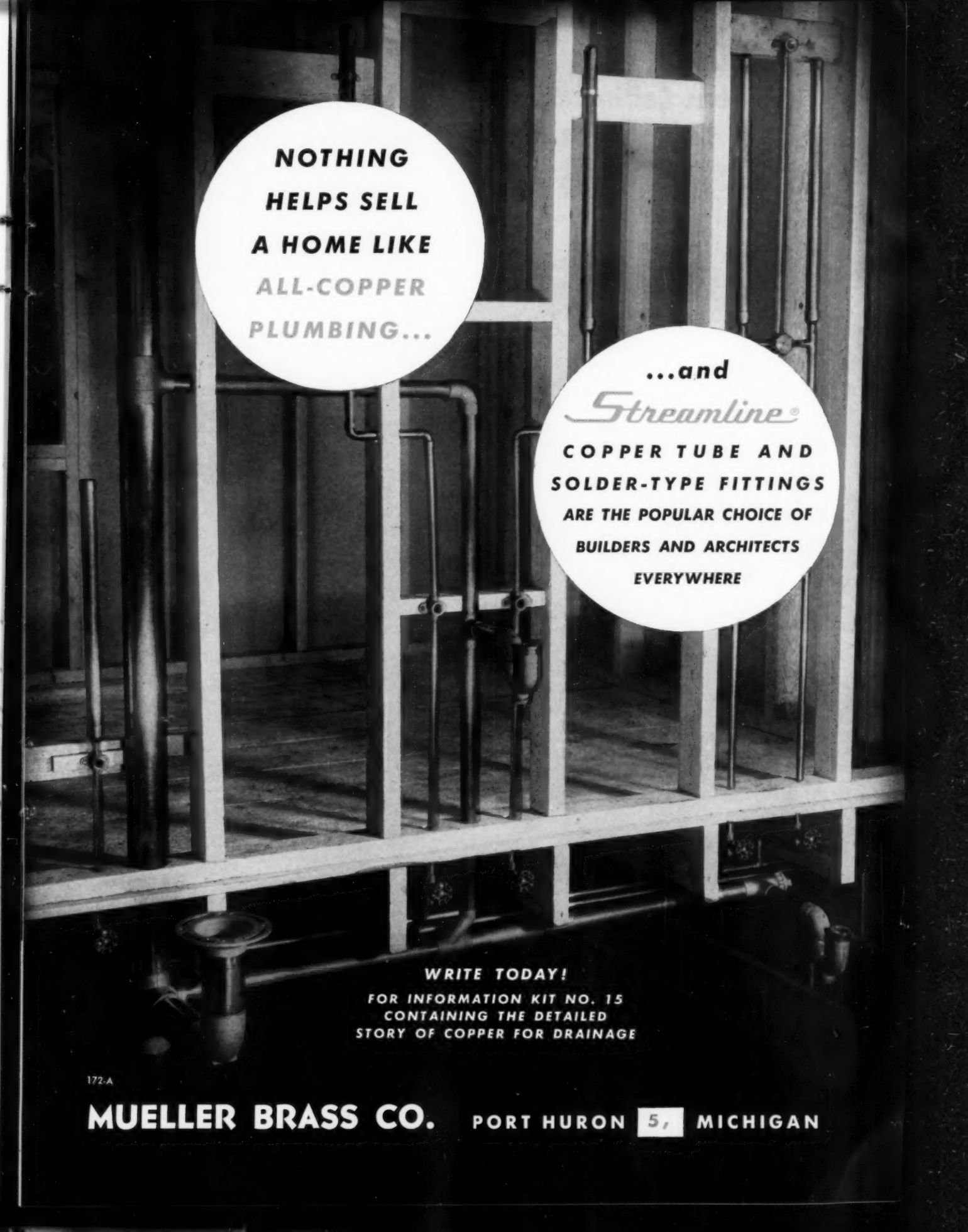
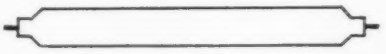
NEW PRODUCTS BRIEFS
Here's all you do: First
Now you may spray on three different colors of wall paint at one time through the same spray gun, says the Glidden Co. The company has developed Glid-Tex colors to remain separated during the spraying process, thus producing a Colors available white.
UNUSUAL COATING PRODUCT
Speckled Paint
Multi-Color Paint
VARI-COLOURED
permits many colou
Paint Announced
New Products
Biggest paint news in 10 years . . .
GLID-TEX!
NOW YOU CAN SPRAY 3 COLORS AT ONE TIME . . . GET UNUSUAL EFFECTS
See free offer below—only actual color chips can show you the beauty of Glid-Tex
Here's news about a decorating achievement that produces unusual color effects too beautiful to describe! In just one spraying, new Glid-Tex creates a vari-colored, textured wall pattern over any solid-color latex or oil base paint. No masking required! No bothersome cleaning of equipment between coats because the three Glid-Tex colors go on in just one application! It's a fast short cut to beautiful rooms at an economical cost—truly an achievement that all contractors and decorators will want to see!
FREE! Only actual color chips can convey the true beauty of Glid-Tex. Write for your copy of the new Glid-Tex folder which also includes specifications and instructions.
By the makers of Spred Satin
Glidden
Professional Finishes
The Glidden Company
Maintenance Finishes Division
Dept. AR-456, 11001 Madison Ave.
Cleveland 2, Ohio
Glidden
QUALITY PRODUCTS


NOTHING
HELPS SELL
A HOME LIKE
ALL-COPPER
PLUMBING...
...and
Streamline®
COPPER TUBE AND
SOLDER-TYPE FITTINGS
ARE THE POPULAR CHOICE OF
BUILDERS AND ARCHITECTS
EVERYWHERE
WRITE TODAY!
FOR INFORMATION KIT NO. 15
CONTAINING THE DETAILED
STORY OF COPPER FOR DRAINAGE
172-A
MUELLER BRASS CO.
PORT HURON 5, MICHIGAN

Modern Ceiling Combines Attractive Decoration with Effective Lighting

Here is a dramatically new and efficient ceiling of Acousti-Celotex Acousti-Lux Translucent Panels—designed to transmit the high levels of today's illumination, with . . .

- Full, uniform light diffusion—"shadow-free lighting."
- Low brightness—no glare.
- Light sources entirely concealed.
- A "self-extinguishing" ceiling surface; will not support combustion.
- Long-lasting, durable panels with dimensional stability essential for translucent ceilings.
- A ceiling system where acoustical tile and translucent panels can be combined in a layout keyed to the needs of the areas below.
- Easy maintenance; convenient size for washing, instant removal for access to light fixtures or other above-ceiling utilities.
- An uninterrupted, level ceiling plane of soft, diffused light.
- Unusual versatility; available in a wide variety of attractive patterns.



ACOUSTI-LUX PANEL—Fabricated of two spaced layers of white vinyl sheeting specially developed for translucent ceilings. Provides excellent balance between high light transmission value and uniform diffusion. 24″ x 24″ size is ideal for installation efficiency, maintenance ease, and integration with Acousti-Celotex Sound Conditioning Tile.

New United Air Lines Ticket Office, Chicago, Ill., showing ceiling of Acousti-Celotex Acousti-Lux Translucent Panels (Moorish Dome pattern) on an Alumitee* Suspension. Architect: Rapp & Rapp, Inc., and United Air Lines Facilities Dept., with Raymond Loewy Associates, Inc. General Contractor: B. W. Handler Co. Acousti-Celotex Contractor: James L. Lyon Company, Chicago

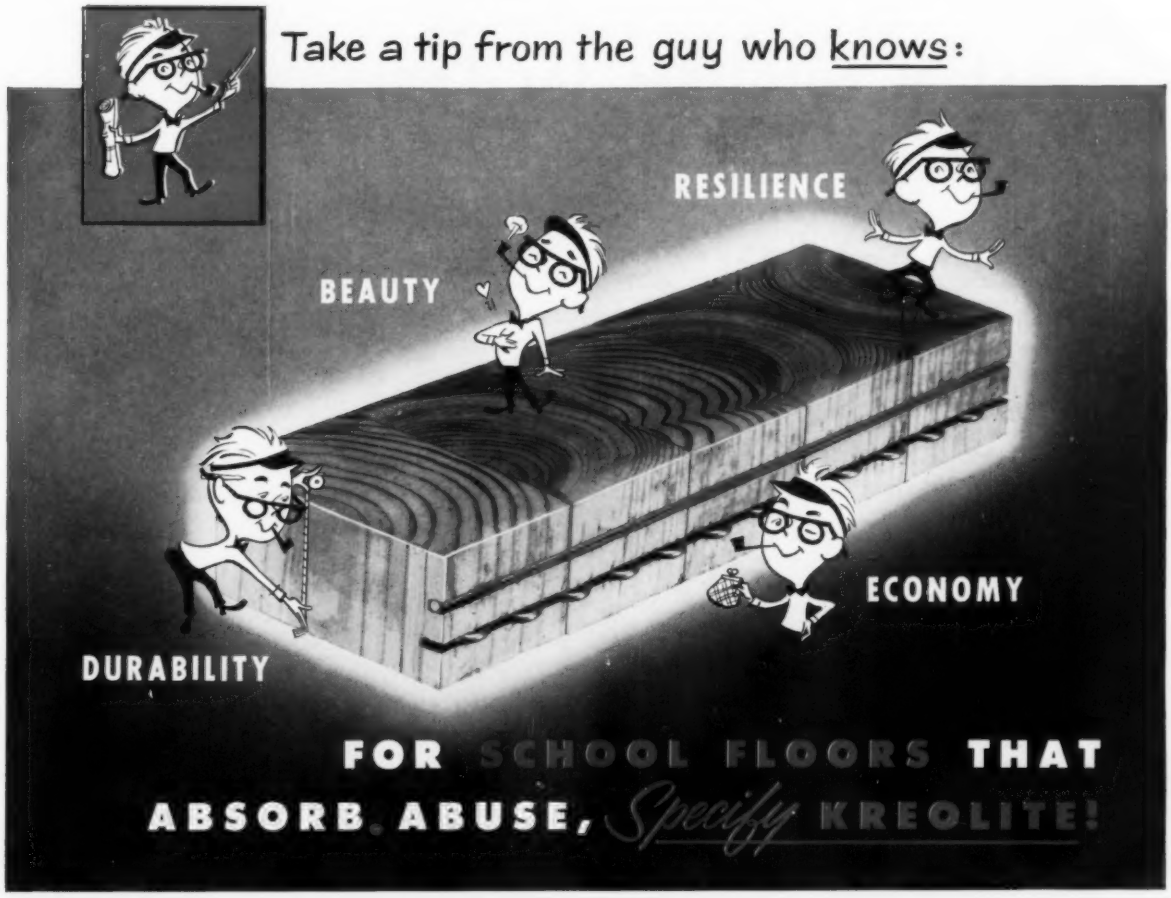
*REG. U. S. PAT. OFF.

ACOUSTI-CELOTEX
REGISTERED U. S. PAT. OFF.
Sound Conditioning

TRADE MARK

Products for Every Sound Conditioning Problem—The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Ill. • In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec.

FOR COMPLETE DETAILS on Acousti-Celotex* ACOUSTI-LUX* and LUMICEL* Translucent Panels and Sound Conditioning Tile, write to The Celotex Corporation, Dept. B-46, 120 S. LaSalle St., Chicago 3, Illinois.



More and more architects, school boards and school executives are specifying Kreolite Flexible Strip End Grain Wood Block Flooring for school activity centers where floors really take a beating.

For only Kreolite combines the beauty of natural finish woods with the rugged durability of end grain construction to provide flooring that withstands the constant abuse common to school gymnasiums and vocational shops.

Resilient Kreolite is economical to install, easy to maintain.

You, too, can realize the benefits from this remarkable flooring material. Just fill out the coupon below.

KREOLITE FLEXIBLE STRIP END GRAIN WOOD BLOCK FLOORS

The Jennison-Wright Corp.

2463 Broadway
Toledo 9, Ohio

Please send me a free sample and complete specifications of Kreolite Flexible Strip End Grain Wood Block Flooring.

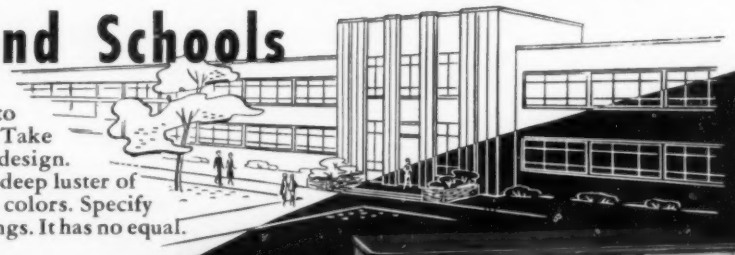
Name_____

Address_____

City_____ State_____

R

Steel Furniture for Contemporary Offices and Schools



All ASE products are of finest quality to complement your architectural talent. Take time to see the simple dignity of ASE design. Examine the fine craftsmanship . . . the deep luster of the finish . . . the good taste in modern colors. Specify ASE steel furniture for your new buildings. It has no equal.

As Modern as Today!

Executive Furniture Finishes—Sea Gray, Bronze Tan, and Ebony. Also available in Dawn Gray, Stylite Tan, Mist Green and Green.

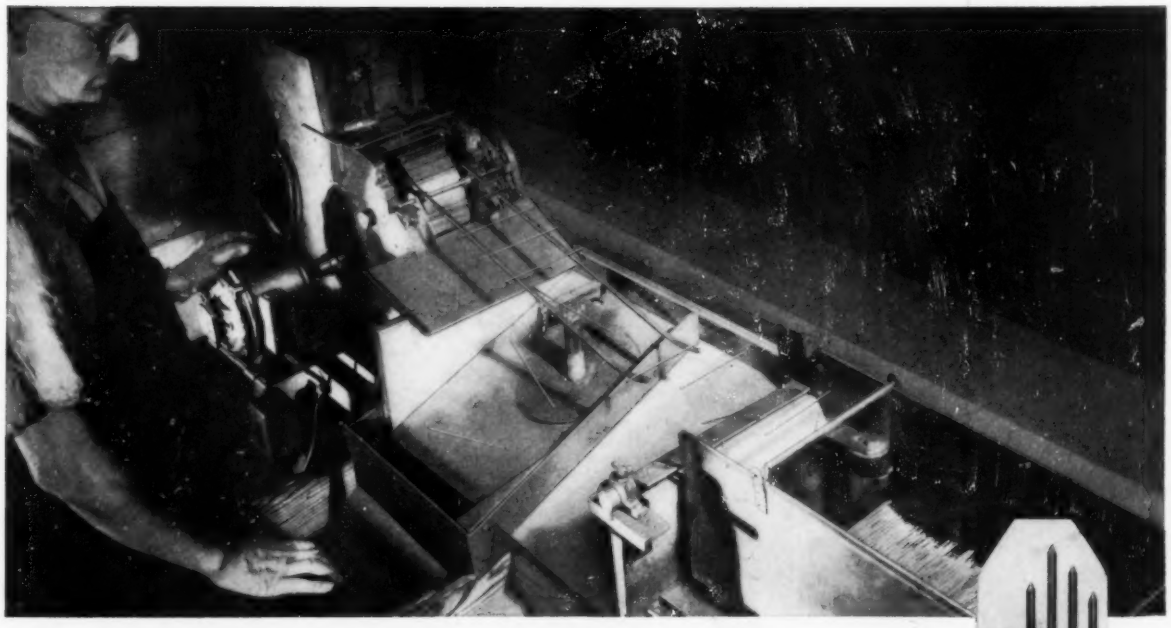
Better Built for Better Business

ALL-STEEL EQUIPMENT INC., Aurora, Illinois

WRITE FOR COMPLETE INFORMATION, THERE'S AN ASE DEALER NEAR YOU

We put Turquoise leads over the jumps

SO THEY WON'T BIND IN YOUR HOLDER!



To assure you of perfectly straight, symmetrical Turquoise Drawing Leads, we send them down this "ski jump" in the Eagle Pencil plant.

The slightest unevenness in a lead makes it wobble and careen off the end of the jump into the "reject chamber". Only the true, perfectly formed leads clear the gap, and land in your holder.

Turquoise leads are of "*Electronic" graphite – reduced to micronic size. Millions more of these finer graphite particles are compacted in every inch of lead. That's why Turquoise deposits a denser, blacker line that reproduces to perfection . . . gives you the strongest, smoothest, longest-wearing point that ever met paper. 17 degrees, 6B to 9H.

*TURQUOISE

DRAWING PENCILS, LEADS AND HOLDERS

HEADQUARTERS FOR QUALITY PENCILS
100 YEARS
EAGLE PENCIL COMPANY
1856 - 1956

NEW LEAD HOLDER! Eagle's *new* 3379 Turquoise Lead Holder is precision-made for trouble-free operation. The *Prestomatic* button releases the lead—and a spring relocks the rifled jaws to hold the lead firmly in place. Red, yellow, and green release buttons identify the degree of lead contained.

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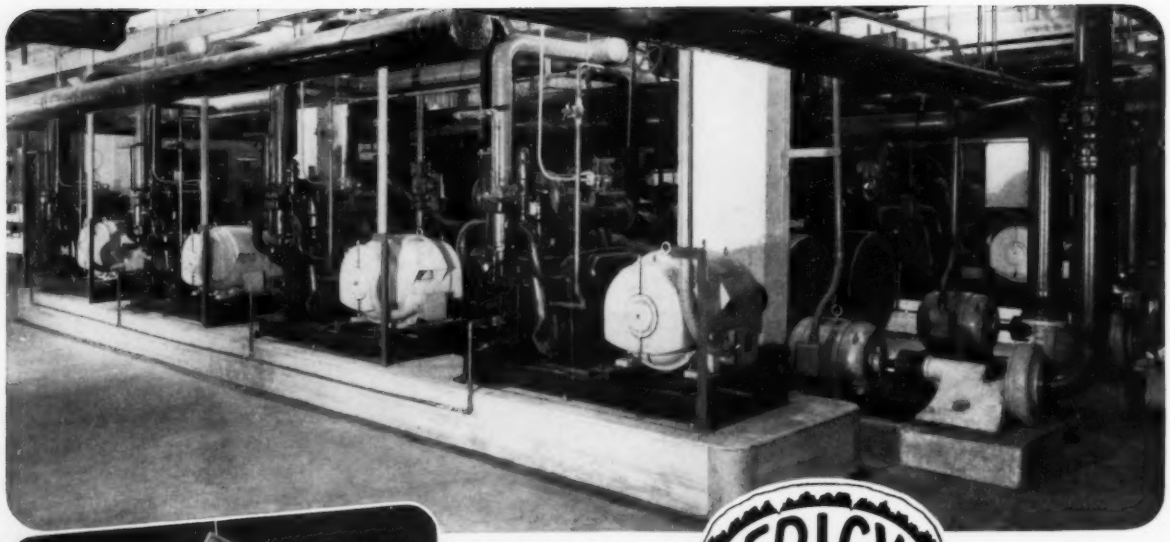
EAGLE PENCIL COMPANY NEW YORK • LONDON • TORONTO • MEXICO • SYDNEY



The 11-story buildings of American National Insurance are kept cool and comfortable by eight Frick "ECLIPSE" compressors, shown above with condensers, water coolers, pumps and other auxiliaries. . . . There are "ECLIPSE" compressors to handle any load, with any refrigerant, at any temperature.

TRADE FRICK MARK®

Air Conditioning

SERVES AMERICAN NATIONAL INSURANCE CO., GALVESTON

These handsome buildings house a staff of over 1000 people for American National, which was organized in 1905 and now has in force more than three billion dollars of insurance.

Both buildings were recently air conditioned completely by Decker and Roberts, Frick Distributors in Fort Worth, using among other things eight "ECLIPSE" refrigerating machines. These compressors have the exclusive Frick nine-cylinder design.

Fine buildings require fine equipment. You get the ultimate in air conditioning and refrigerating machinery when you specify "FRICK." Write for estimates and Bulletin 100 today.

DEPENDABLE REFRIGERATION SINCE 1882

FRICK CO.

WAYNESBORO, PENNA. U.S.A.

In this spacious wardrobe the doors are of Perforall (perforated Masonite Duolux) . . . another example of the versatile decorative treatment available in Glide-All Sliding Door panels. Architect: Edward H. Fickett, Builder: Evan Koppe Co.

with GLIDE-ALL® *Sliding Doors*

Anywhere In The House!

With attractive Glide-All Sliding Doors you can easily and quickly build floor-to-ceiling, wall-to-wall expansive wardrobes, big closets in small rooms, narrow halls, confined entranceways and playrooms. Glide-All Doors are complete, ready to install . . . and they reduce construction costs in both time and material. Standard 6'8" and 8' height panels, in varied widths, are available in either solid or in Perforall (perforated). See "Sweets" or write today for details.

Glide-All Doors are available from distributors throughout the United States and Canada. For information write Plant nearest you.

GLIDE-ALL DOORS ARE A PRODUCT OF
WOODALL INDUSTRIES INC.
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Glide-All Sliding Doors are engineered as a "package door" for easy, fast installation with adjustment features for perfect fitting in out-of-plumb or variable openings and to assure a lifetime of trouble-free service.

ADJUSTABLE UPPER ROLLERS

Steel and molded Nylon roller assembly has full ¾" adjustment simply made by loosening a single screw and moving shielded ratchet mount to desired height.

ADJUSTABLE LOWER GUIDES

Spring steel guides with quiet, smooth acting polyethylene sleeves are concealed inside tube frames. They also adjust within a full ¾" range.

Why do modern school systems install Mutschler?

The school homemaking kitchen and laundry are two of the department's most vital areas. And, they should simulate home conditions as nearly as possible. Schools rely on Mutschler equipment and planning help because they benefit by the experience of a company that has been the "first name in kitchens since 1893." Schools also receive help in planning complete homemaking departments with Mutschler cabinetwork of finest northern maple construction. Cabinets are available in a choice of catalytic natural grain or colored enamel finishes. These finishes are practically impossible to scratch, and are impervious to household solutions and solvents. Write your nearest Mutschler sales representative below for complete information, without obligation.

Architects: See Sweet's Architectural File, 24b/Mut and 23d/Mu.

Partial view of adjoining laundry facilities.

A modern Mutschler school kitchen. Note latest home kitchen features and efficient working pattern.

FOR

Food Laboratory
Laundry Area
Arts and Crafts
Clothing Laboratory
Sewing Laboratory
Home Management Area
Child Care Area
General Storage Areas

Mutschler
SCHOOL EQUIPMENT

Finest in domestic and institutional cabinetwork since 1893!

Close-up of built-in oven and range.

SALES OFFICES

NORTHEAST

CARBEAU, INC.—Boston, Massachusetts; Maine, New Hampshire, Vermont
RAY S. SNYDER COMPANY—Hartsdale, N. Y.; Massachusetts, Connecticut, Rhode Island, New Jersey (northern)
W. S. BALLOU—Massapequa, L.I., N. Y.; New York City, Long Island (eastern)
SCHOOL EQUIPMENT, INC.—Syracuse 3, N. Y.; New York State
AMERICAN SEATING CO.—Philadelphia 30, Pa.; Pennsylvania, New Jersey (southern), Delaware
QUEENS EQUIPMENT CO.—New York, N. Y.; New York City
R. A. KELLY, INC.—Hempstead, L.I., N. Y.; Long Island (western)

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SOUTHERN DESK COMPANY—Hickory, N. Carolina; Maryland, West Virginia, Virginia, North Carolina, Tennessee, Mississippi
AMERICAN SEATING CO.—Atlanta 3, Georgia; South Carolina, Georgia, Alabama, Florida
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OGLESBY EQUIPMENT CO.—Detroit 19, Michigan; Michigan (lower, except southwestern)
HALDEMAN-HOMME CO.—St. Paul 4, Minnesota; Minnesota
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PORTA BILT KITCHENS—Nappanee, Ind., Indiana (northern), Michigan (southwestern)

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HOOVER BROTHERS—Kansas City 6, Missouri; Nebraska, Kansas, Missouri (western)
CENTRAL SCHOOL SUPPLY CO.—Louisville, Kentucky; Kentucky
LEN A. MAUNE CO.—St. Louis, Mo.; Missouri (eastern)

SOUTHWEST

W. C. HIXSON COMPANY—Dallas 2, Texas; Louisiana, Oklahoma, Texas, New Mexico
PBSW SUPPLY COMPANY—Phoenix, Arizona; Arizona

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AMERICAN SCHOOL SUPPLY CO.—Denver 2, Colo.; Colorado, Wyoming (eastern)
HULL EQUIPMENT COMPANY—Salt Lake City 2, Utah; Utah, Nevada, Idaho, Wyoming (western), Montana
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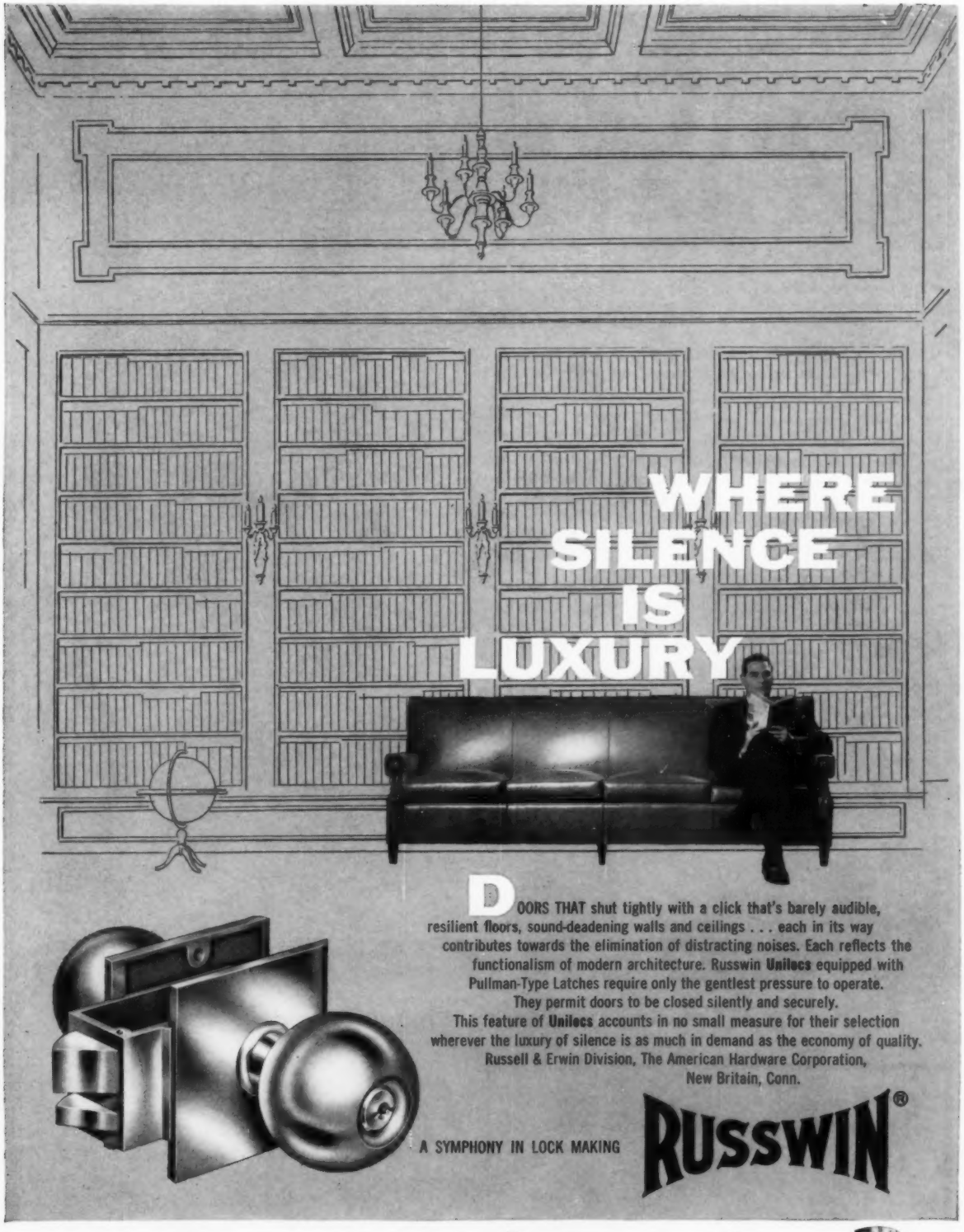
MUTSCHLER BROTHERS CO.—Nappanee, Indiana; Oregon, Washington, North Dakota, South Dakota



DOORS THAT shut tightly with a click that's barely audible, resilient floors, sound-deadening walls and ceilings . . . each in its way contributes towards the elimination of distracting noises. Each reflects the functionalism of modern architecture. Russwin **Unilocs** equipped with Pullman-Type Latches require only the gentlest pressure to operate. They permit doors to be closed silently and securely.

This feature of **Unilocs** accounts in no small measure for their selection wherever the luxury of silence is as much in demand as the economy of quality.

Russell & Erwin Division, The American Hardware Corporation, New Britain, Conn.

A SYMPHONY IN LOCK MAKING

RUSSWIN®

"400" Closers

Stilemaker Locksets

Overhead Door Holders

"Ten Strike" Cylinder Locks

Surface Door Closers

Fire Exit Bolts

G.E. BUILDS THEM

solid

Heavy gauge steel cabinet.
Dependable, trouble-free performance.

smart

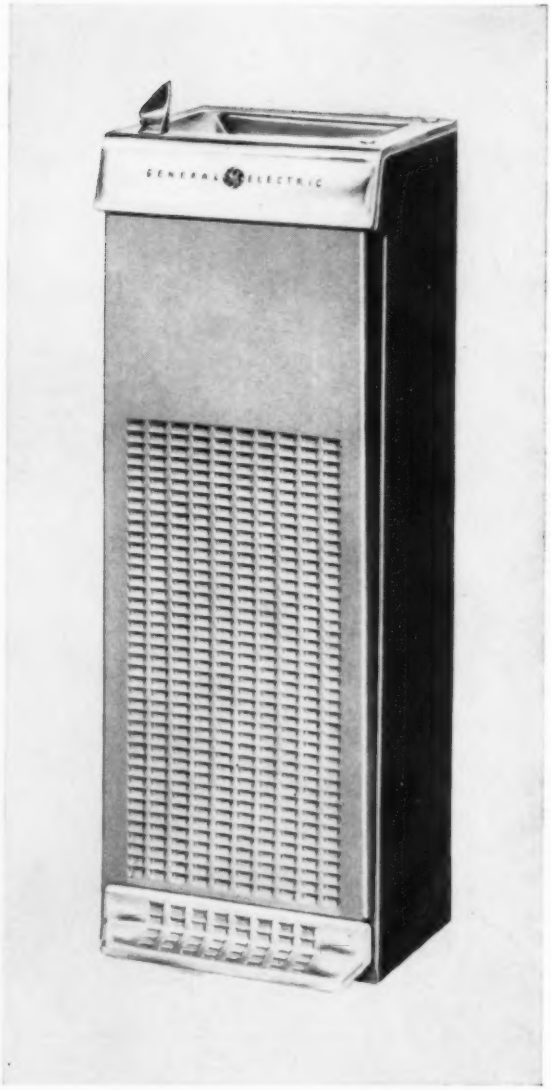
Modern styling, functional louvres,
long-lasting, soft gray finish
blends with any interior.

sure

Steady flow of refreshing, cool water,
even on peak-demand days. Exclusive curved
full-width foot pedal for easy water control.
Anti-splash basin avoids splattering.

and saving!

Take up to 30% less floor space
for extra flexibility in placement.
G-E engineering cuts water and electricity bills.
Operating cost only pennies a day.



WATER COOLERS

for offices, stores, institutions and factories

Front panel snaps off to reveal 5 reasons for dependability:

1 *Vapor-sealed upper compartment is completely insulated—reduces operating cost.*

2 *Extra-large stainless steel cold water reservoir guarantees ample supply on peak demand days.*

3 *Adjustable Dial has 8 settings for control of water temperature.*

4 *Direct Rod to bubbler control assures steady stream of water.*

5 *Time-proven Compressor is hermetically sealed, lubricated for life, spring mounted for minimum vibration.*

• G-E Water Coolers are available in 8 different models with capacities ranging from 2.85 to 21.5 gallons per hour. The standard G-E 5-year protection plan backs up the famous G-E quality built into each model. Call your local G-E Water Cooler dealer or write to General Electric Company, Commercial and Industrial Air Conditioning Department, 5 Lawrence Street, Bloomfield, New Jersey.

Progress Is Our Most Important Product

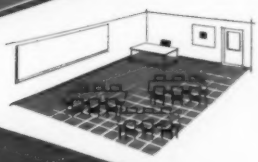
GENERAL ELECTRIC

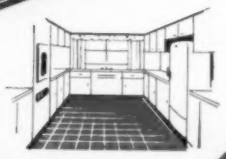
there's

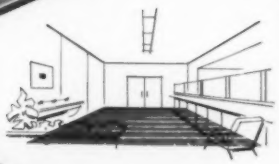
more

VINYL

in every tile of







Because of its high percentage of vinyl, the more dense surface of Bolta-Floor has greater wearability, easier maintenance . . . will retain its rich natural lustre years longer, with or without waxing.

Bolta-Floor is produced in a full range of 22 fashionable decorator colors . . . 5 solid and 17 marbleized. It's available in 4 tile sizes (6 x 6, 9 x 9, 12 x 12, 18 x 18), 2 roll widths (27″ and 54″) and in 3 gauges (⅛″, 3/32″ and .080 gauge).

To be sure of finest quality vinyl flooring with assured top performance, specify Bolta-Floor —another superior product of The General Tire & Rubber Co.

Bolta Floor

FOR HOSPITALS
SCHOOLS • OFFICES
THEATRES • HOTELS
MOTELS • APARTMENTS
BANKS • HOMES

WEARS LONGER,
WITH OR WITHOUT WAXING

The General Tire & Rubber Co.
Flooring Division · Akron, Ohio

Congratulations to Macon, Georgia on its radiant heated Junior High School for Girls

The little Red Schoolhouse

Albany, Georgia keeps pace with radiant heated Isabella Heights School

...aint what she used to be!

Memories of the little red schoolhouse and the heart-tugging refrain "school days, school days, good old golden rule days" are fine . . . sentimentally. Practically, we Americans have too much concern for the health and welfare of our children to really want to return to the era of the wood stove and kerosene lamp. The hickory stick . . . maybe . . . but not the others!

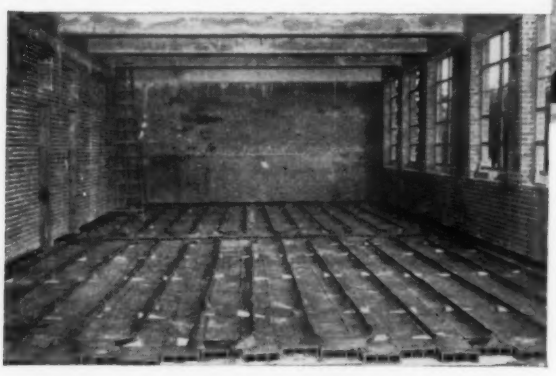
We take pride in the finest school buildings in the world because we know that the education of our children is the most *important* thing in the world . . . basic to American progress. So we're not "soft," just realistic, in providing the best light, heat, sanitation and recreational facilities possible. Healthy children learn more, faster.

All over the country new schools are incorporating radiant heating because its gentle, all-permeating, sun-like warmth . . . without hot or cold spots, drafts, or dust laden currents . . . provides the most healthful school heating known. Concealed heat sources and controls resist vandalism, promote safety, save valuable floor and wall space and improve classroom appearance. Auditoriums and gymnasiums (even swimming pools!) derive particular benefit.

Steel pipe is, of course, first choice for radiant heating as it is for conventional heating . . . proved in more than 60 years of service in steam and hot water systems. In fact steel pipe is the most widely used pipe in the world, for heating, plumbing, snow melting, fire sprinkler systems and the transmission of power, steam and air.

Beautiful Lakeview School, Vass, N. Carolina will be comfortable, too, with radiant heating

Typical installation in modern schoolroom



Washington - Douglass Elementary School, Jackson, Tenn., looks as modern as its radiant heating

Send for free 48 page color booklet "Radiant Panel Heating with Steel Pipe" and 32 page companion booklet "Steel Pipe Snow Melting and Ice Removal Systems."

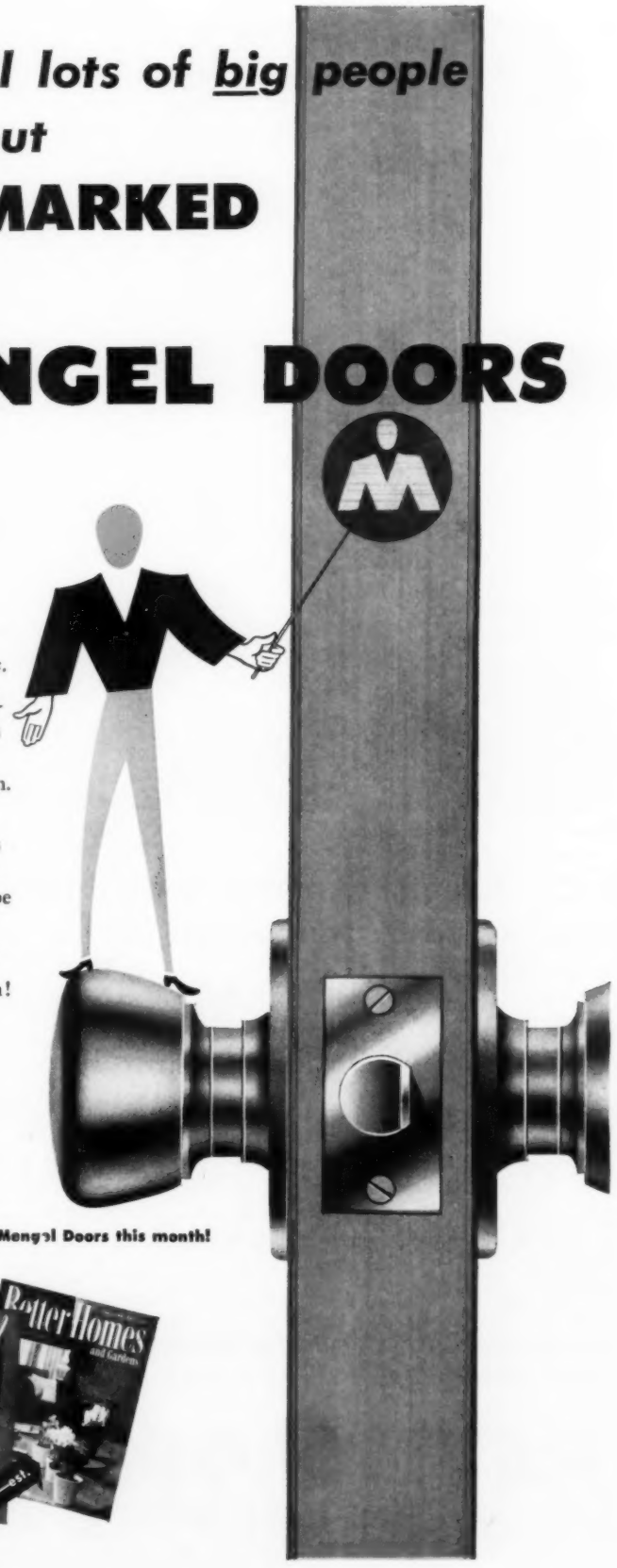
Committee on
STEEL PIPE RESEARCH
AMERICAN IRON AND STEEL INSTITUTE
350 FIFTH AVENUE, NEW YORK 1, N.Y.

Steel Pipe is First Choice

Lots of little ads tell lots of big people about

TRADE-MARKED

MENGEL DOORS



ARCHITECT, builder or dealer—who are the biggest people in *your* work?

There's only one final answer. They're the people who buy, build and remodel houses . . . *consumers.*

You know the value of the new permanent, doweled-in-the-stile Mengel Door trade-mark. We think it's important that your customers be told this distinctive mark is a symbol of pride and protection. A guarantee of quality. A proof of fulfillment.

So, beginning with current issues of the magazines you see here, we're telling them. In a continuing campaign of small-space "eye-catcher" ads, they'll be reminded to look for the 'Mengel-Man' trade-mark long associated with Mengel *Permanized* Furniture.

You watch for these ads too. Hope you'll like them! Door Department, The Mengel Company, Louisville 1, Ky.

Mengel Doors equal or exceed the requirements of Bureau of Standards specifications CS200-55

Over 54 million consumer readers exposed to Mengel Doors this month!

Reynowall movable partitions add dignity and beauty to these modern offices of the well-known contractor firm: Morrison-Knudsen Company, Inc., in San Francisco.

Something new and flexible has happened to movable partitions!

Reynowall

Aluminum Movable Partition Systems

Here's the newest concept in economical metal partitions...strong, rigid, beautiful Reynowall! This system provides complete flexibility to meet any present plan and all future modifications. Simplicity of design assures fast installation and easy relocation. Cornice and ceiling-high partitions can be quickly cut down to lower height. Glazed railing units can be modified to low railing heights. All cutting can be done on the job. You plan with six unit types, from 42½" railing height to 9'2¼" solid or glazed partition. Each type is designed to use modules 36", 42" and 48" wide. Six standard baked-on colors, hammer-embossed or leather-grain finish. For complete data on Reynowall write to... **Reynolds Metals Company,** 2015 S. Ninth St., Louisville 1, Ky.

Framing members are strong, fluted aluminum extrusions. Panels are rigid, tray-like assemblies of embossed aluminum bonded to resin-impregnated kraft honeycomb cores. Maximum overall partition thickness, 2"—saves floor space. Provision for electrical wiring facilities within the partition members.

REYNOLDS ALUMINUM

BUILDING PRODUCTS

See "FRONTIER," Reynolds great dramatic series, Sundays, NBC-TV Network.

A WAYLITE SURFACE

needs no acoustical treatment

In addition, it has high thermal insulative qualities . . . offers many decorative possibilities . . . it is low in cost . . . fire-safe

A large number of schools are being built these days of Waylite concrete masonry units.

The fact that the exposed surface of Waylite is one of the most efficient acoustical treatments known is in part responsible. Rooms that are comfortable to the ear are equally important in churches, auditoriums, offices, and many other structures.

Exposed Waylite is not only comfortable to the ear, but it is pleasing to the eye. The unit patterns shown give some idea of the varied decorative effects that can be easily achieved. The natural surface of Waylite units is attractive in color and texture. Units may be painted—or pigmented during manufacture.

Waylite concrete masonry units are structurally adequate and give a combination of four important factors: (1) high thermal insulative qualities; (2) excellent acoustical values; (3) a wide range of decorative possibilities; (4) low in cost—and fire-safe.

You will find 24 pages of engineering data on Waylite in Sweet's Catalog. Additional information is available on request. Address the Waylite Company, 20 North Wacker Drive, Chicago, Illinois or Box 30, Bethlehem, Pennsylvania.

WAYLITE

MASONRY UNITS

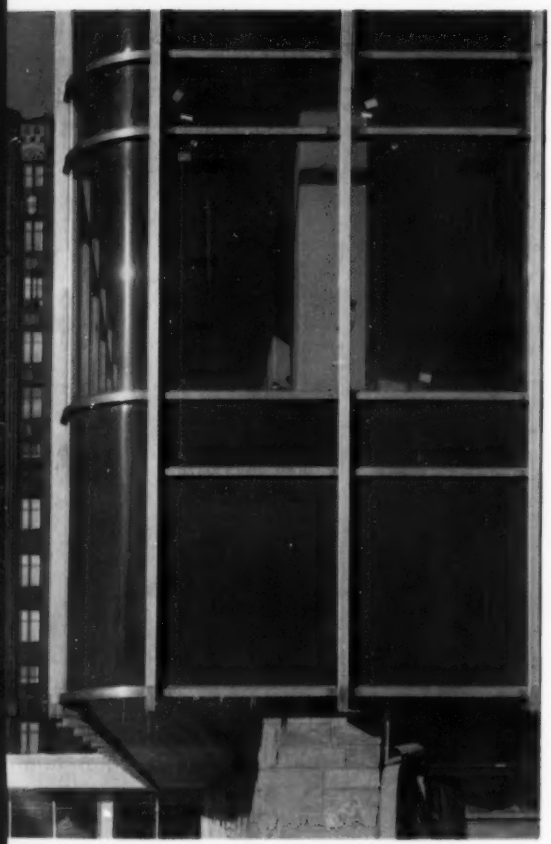
The entrance beautifully combines Stainless Steel, porcelain-enamel, glass and stone.

. . . they're colorful

. . . they're durable

. . . they go up fast

Curtain walls of Porcelain-enameled and Stainless Steel



The interlocked steel curtain wall panels are assembled to the building with steel anchors, bolted at top and bottom of the spandrel beam.

Eyes were bulging in Minneapolis at the speed with which the new Lutheran Brotherhood Building began to rise from the street. As the *curtain wall* was applied, it became obvious that this would be one of the outstanding office buildings in Minneapolis for a long time to come.

The finished building is like a shimmering, blue-green gem, spiced with a delicate checkerboard of Stainless Steel mullions. The USS Stainless Steel will offer service equal to the projected life of the building. And in addition to long service, the porcelain-enamel, on its base of USS Vitrenamel sheets, provides the strong, deep color that distinguishes this structure. Maintenance cost will obviously be low.

The curtain wall preassembled units are very simple. Unit frames are 4′ x 14′, made from USS type 302 Stainless Steel. The bottom of each frame contains a distinctive blue-green insulated porcelain-enameled steel panel. The top section is fixed double glass. Prototype frames were subjected to a rigid pressure chamber water test to prove their water-resistant qualities.

By using curtain wall panels fabricated from these two steels, you can exert the greatest control in design, color styling and building costs. For more information, write to United States Steel Corporation, Room 5195, 525 William Penn Place, Pittsburgh 30, Pa.

USS

More than 44,000 square feet of porcelain-enameled and Stainless Steel curtain walls on the Lutheran Brotherhood Building were erected in seven weeks.

Architects: Perkins & Will, Chicago.
General Contractors: Kraus-Anderson, Inc., Minneapolis.
Curtain wall: Fabricated by Flour City Ornamental Iron Co., Minneapolis.
Porcelain-enameled panels: Ingram-Richardson Mfg. Co., Beaver Falls, Pa.

USS STEELS FOR ARCHITECTURAL DESIGN

USS STAINLESS STEEL **USS VITRENAMEL**

UNITED STATES STEEL

Bucket Brigade

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We don't claim that 202 years in business are significant of anything except continued successful operation, but what does mean something is the fact that so many architects and designers continue to write Devoe finishes into their specifications.

That is the best proof that we have continued to anticipate the trends in finishes and colors demanded by discriminating clients.

The investments Devoe is now making in new product and laboratory research would have been high finance in the old days of paint making. Today they are still "fancy figures," but more than that, they are assurance that your confidence in Devoe will never be misplaced.

Such outstanding products as Devoe Vinyl Wonder-Tones, Devran (epoxy) finishes, the basically new Wonder-Pruf Masonry Finish (pat. pending) and the improved Wonder-matic Colors all illustrate the Devoe "firsts" that mean continued client satisfaction.

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Appearance, however, is only a part of the reason for the success of these two outstanding Smithcraft fluorescent fixtures. Their lighting performance is highly efficient, and their availability in several combinations and lengths of lamps make them adaptable to any installation.

"Lighting units with the perfect profile" . . . designed and produced by Smithcraft to serve as architectural lighting "tools" for the men who design America's buildings.

Smithcraft DIRECTOR

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Smithcraft
LIGHTING DIVISION
CHELSEA 50, MASSACHUSETTS

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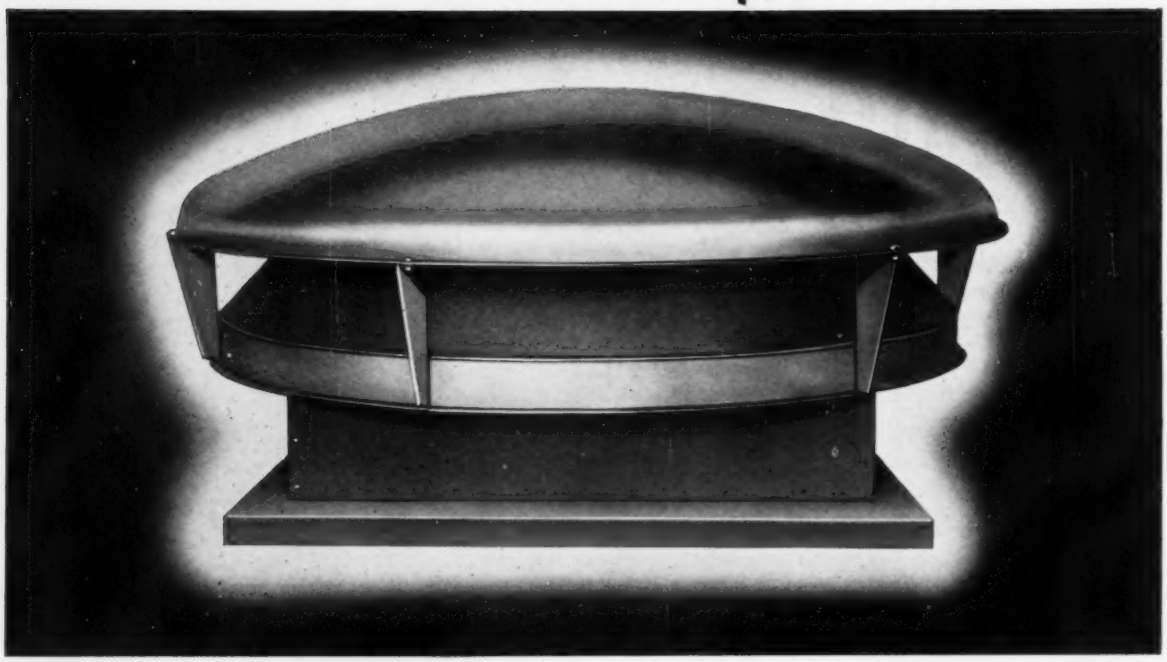

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- Wide capacity range (400 to 34,000 cfm)
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The new *Allen* "I-Line" Roof Fan meets the architect's demand for an attractive unit that hugs the roof without sacrificing the high efficiency required by engineers. This is accomplished by a circular spun hood and fan venturi with a directional baffle so arranged in relation to the propeller as to provide maximum efficiency with minimum over-all height.

In addition, the new "I-Line" design makes installation exceptionally easy and the hinged hood simplifies maintenance and cleaning.

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See Sweet's (8b/Al) or write for catalog that gives you specifications and complete performance data.

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Applications of Viertex V.E.F.* Fabrics at the Hollow Tree School, Darien, Conn. Ketchum, Gina & Sharp, architects.

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help schools **multiply** wall space

In hundreds of new schools, where walls serve several purposes, architects have specified Viertex for functional versatility as well as beauty. Viertex V.E.F.* Fabrics cover walls and panels, bulletin boards, tack boards, serve a variety of other applications. Easily cleaned, Viertex is stain, fire and soil resistant, won't fray, chip, peel or scratch, is practically indestructible. Available in 36 fade-resistant House & Garden colors, over 24 three-dimensional patterns.

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Elementary School #220, Forest Hills, N.Y. (W. F. R. Ballard)
Southridge & Washington Schools, Charlotte, Mich. (Warren S. Holmes)
Syosset High School, Syosset, New York (Eggers & Higgins)
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Write for Carpenter's new Brochure #117-a, "How to Cut Your Decorating and Maintenance Costs". Actual Viertex V.E.F.* treatments and swatches included. For Tack Board specification sheets, please ask for Booklet #1670.

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* vinyl electronically fused

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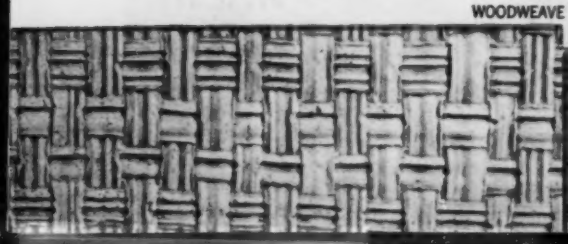
WOODWEAVE



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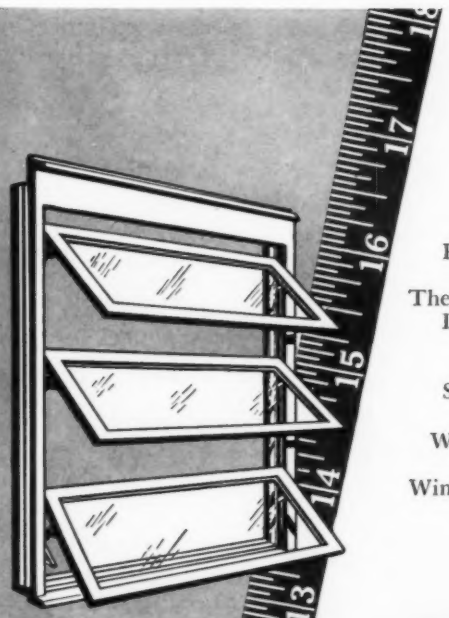

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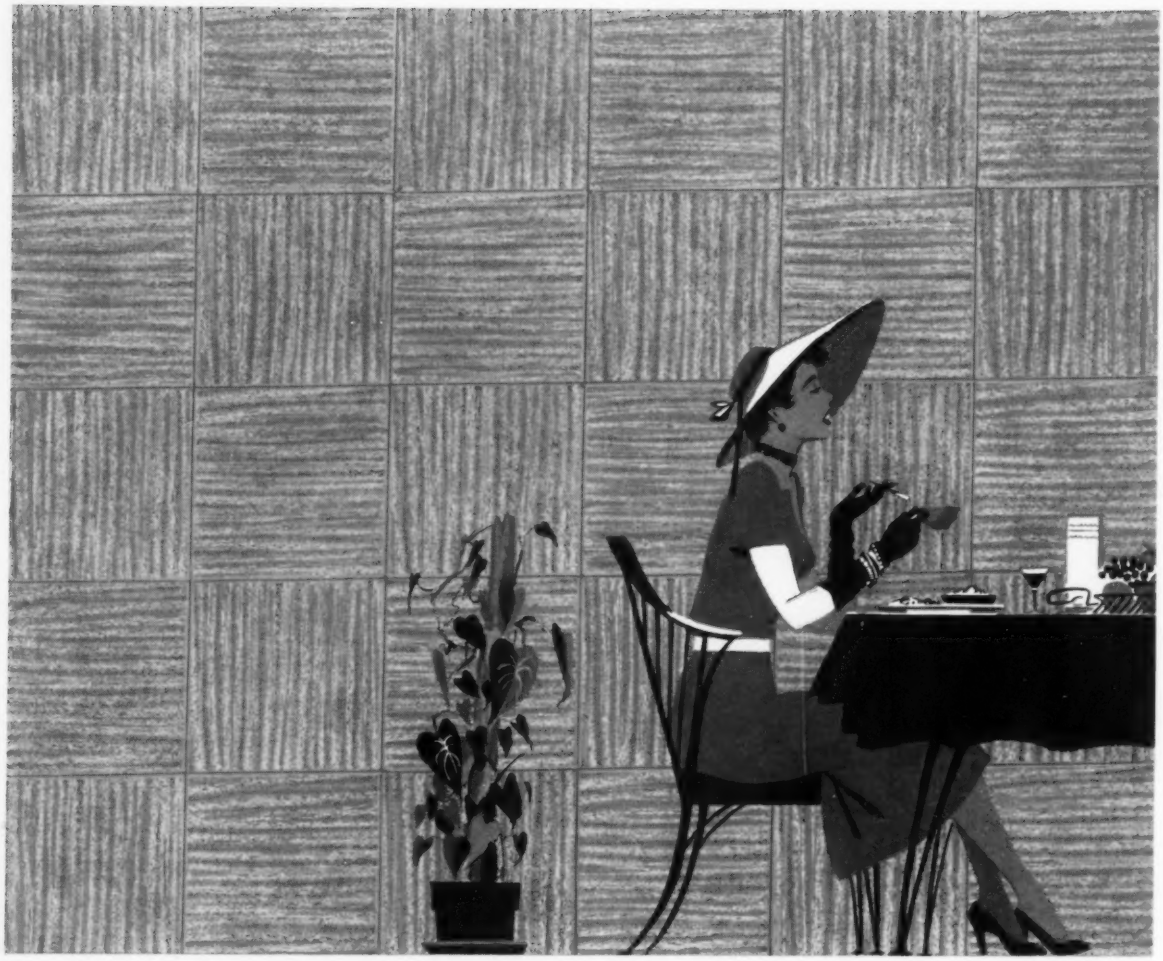

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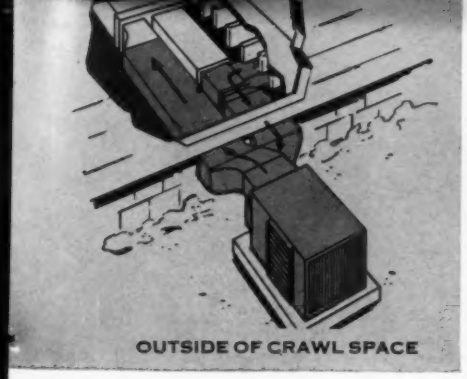
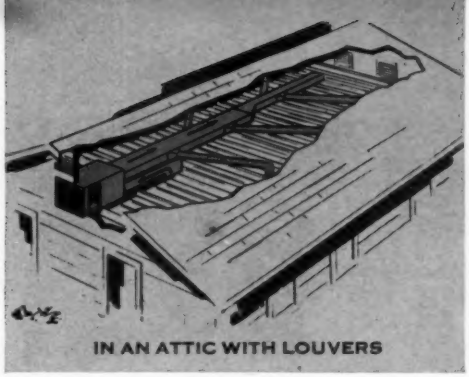
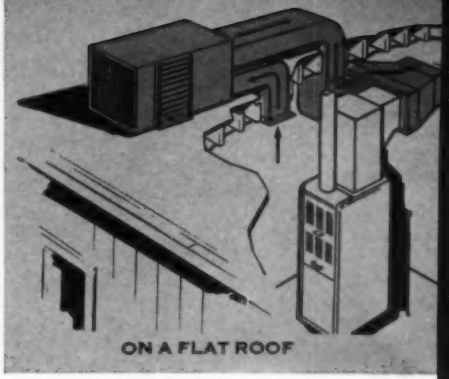


OUTSIDE OF CRAWL SPACE



IN AN ATTIC WITH LOUVERS



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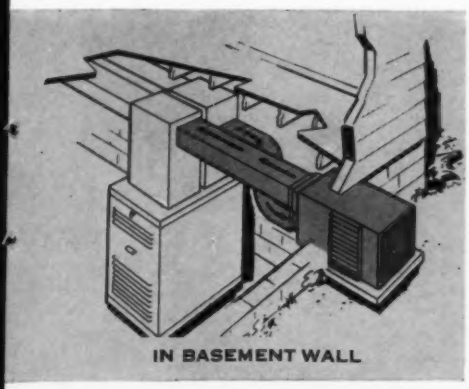
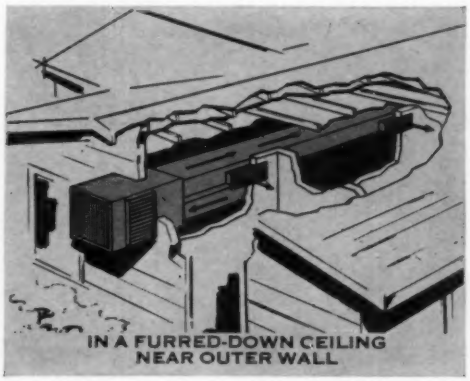
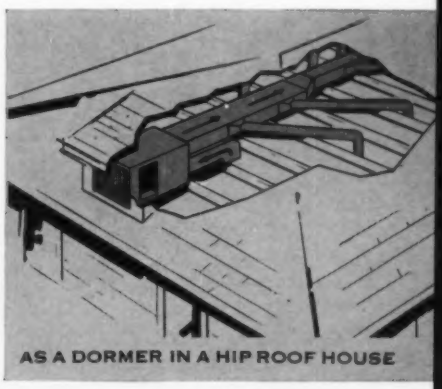


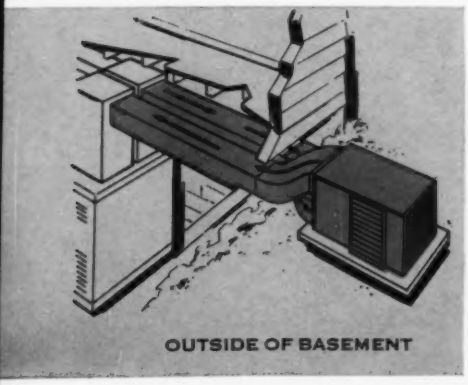
IN BASEMENT WALL



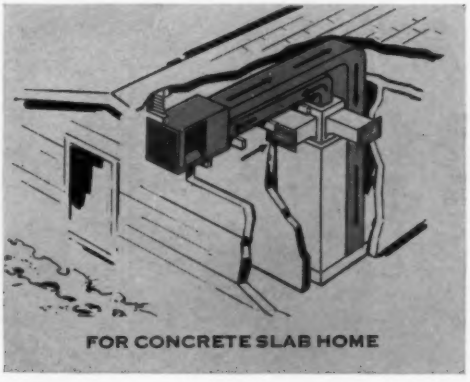
IN A FURRED-DOWN CEILING
NEAR OUTER WALL



AS A DORMER IN A HIP ROOF HOUSE



OUTSIDE OF BASEMENT



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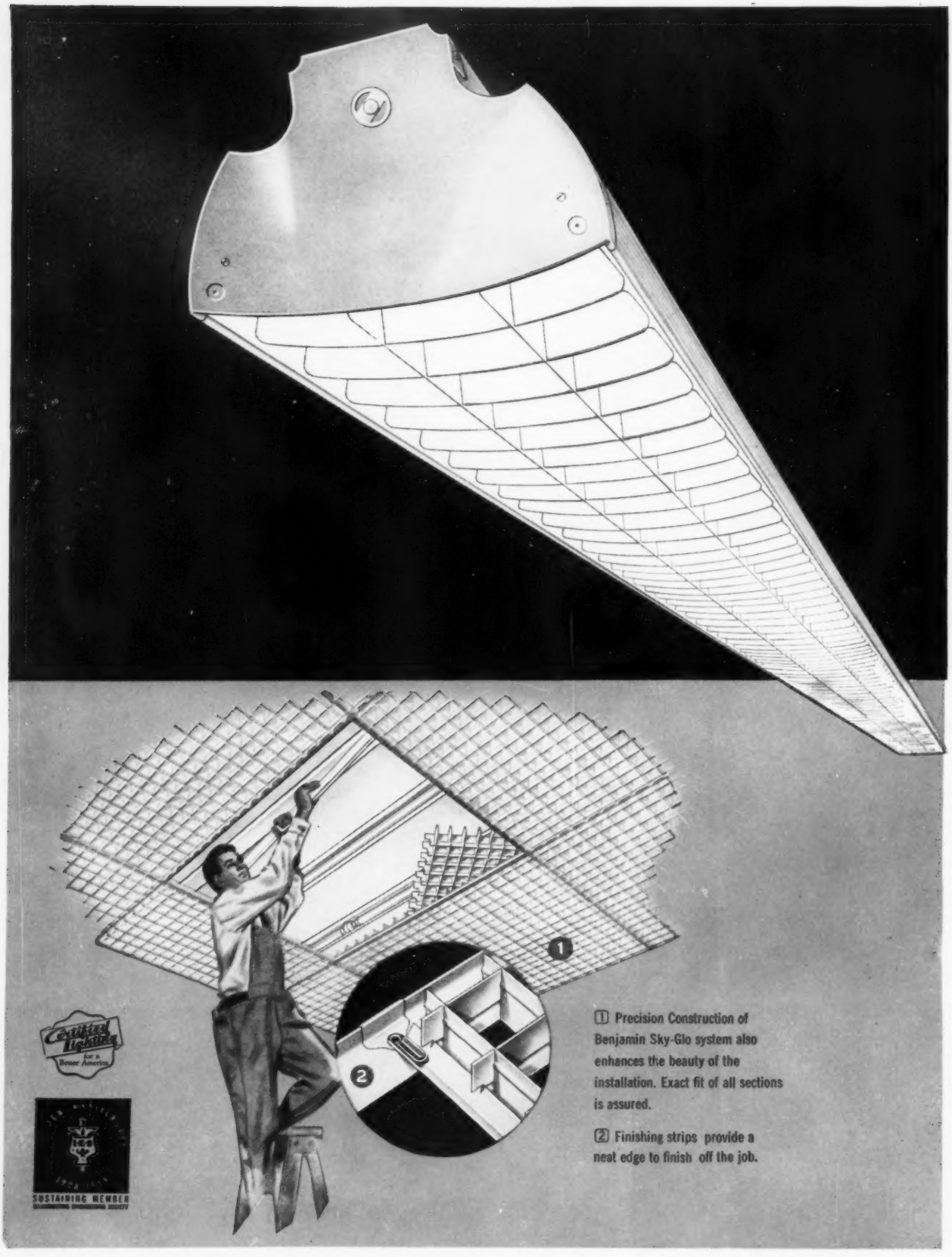
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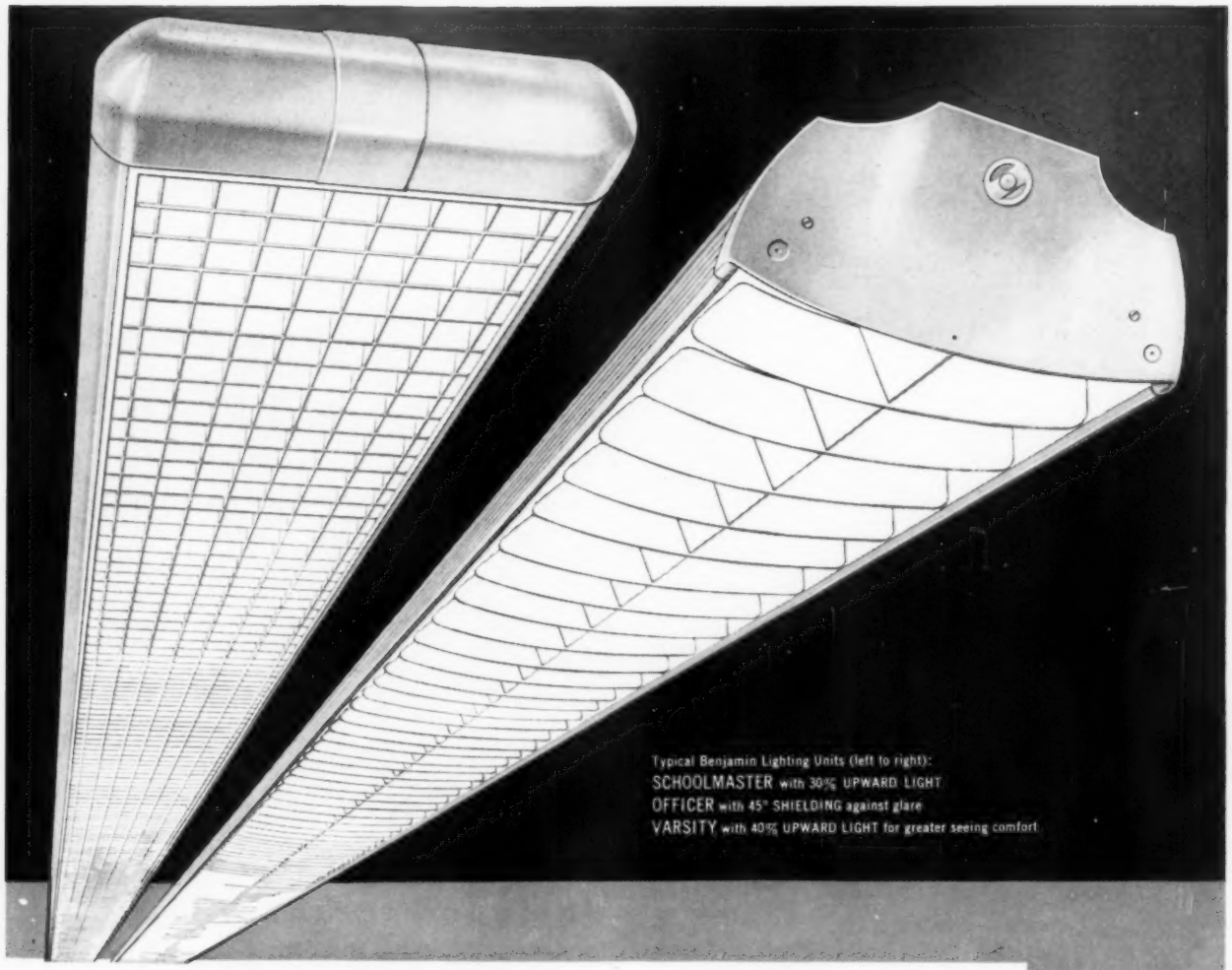
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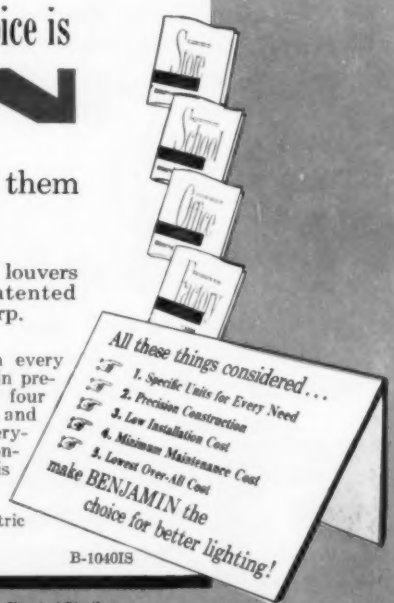

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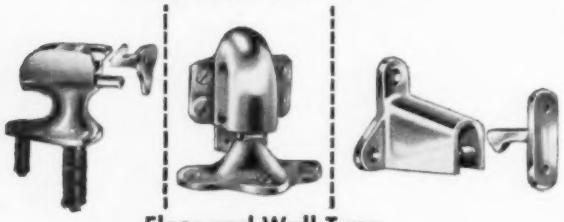

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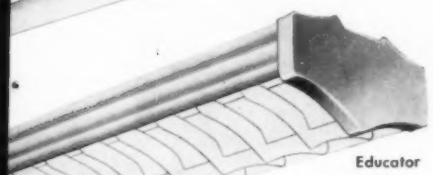
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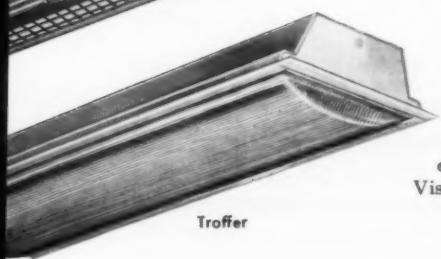
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The obvious focus of attention is the massive but graceful roof, formed of huge intersecting cylindrical shells of concrete, 120 feet wide but only 4½ inches thick. The illusion is one of lightness and airiness, belying the roof's actual weight of 3,000 tons.

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Johns-Manville

Aquadam
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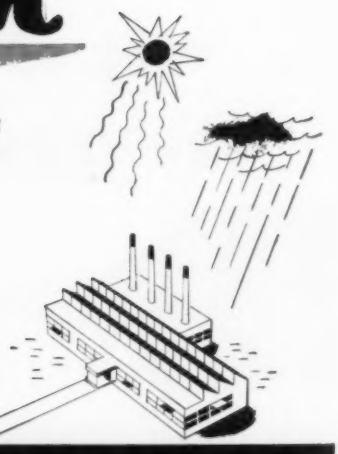

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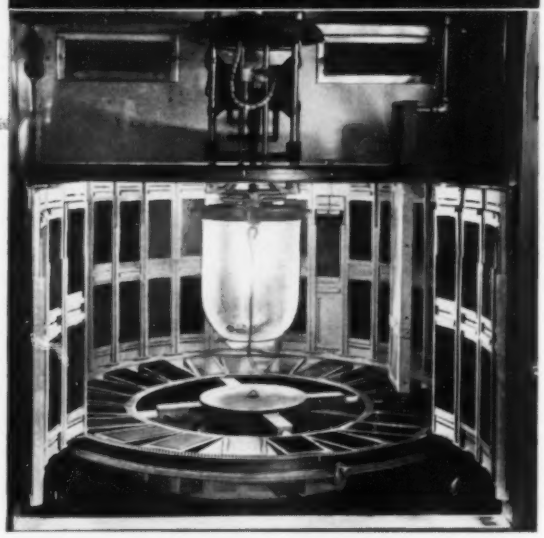
- Excellent uniformity

Tests prove Aquadam's superior weather resistance!



J-M's Accelerated Weathering Test subjected samples of dead level bitumens to repeated radiation, water spray and refrigeration. Results: Aquadam has approximately twice the ability of typical asphalts to retain its initial properties on exposure.

J-M Aquadam proved superior by actual test... helps provide longer roof life at no extra cost

Johns-Manville Aquadam is specifically designed to provide maximum built-up roof service for deck inclines from dead level to ½″ per foot*.

J-M Aquadam Built-Up Roofs owe their proven superiority to the newly developed bituminous asphalt cementing agent Aquadam—which is used in the application of the roofing felts.

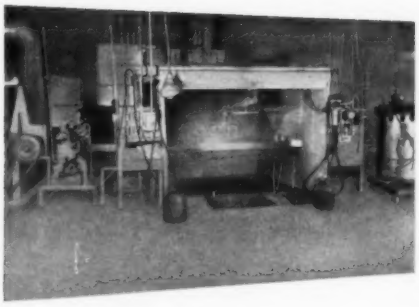
When applied, the excellent adhesive properties of Aquadam provide a permanent bond to the felts, and to gravel or slag surfacing. Its rigidly controlled quality and excellent flow properties assure easier mopping, thorough coverage, and longer lasting roof life.

For complete information about Aquadam Roofs, see your Approved Johns-Manville Built-Up Roofing Contractor. He's listed in the classified section of the telephone directory. Or write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 565 Lakeshore Rd. East, Port Credit, Ont.

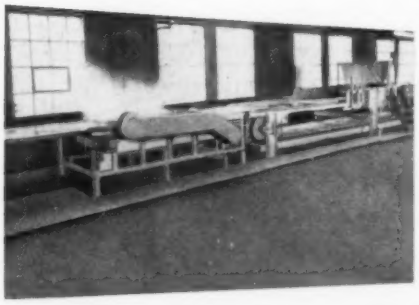
Fight cancer with a checkup and a check—give to American Cancer Society

JOHNS-MANVILLE JM PRODUCTS **Johns-Manville**

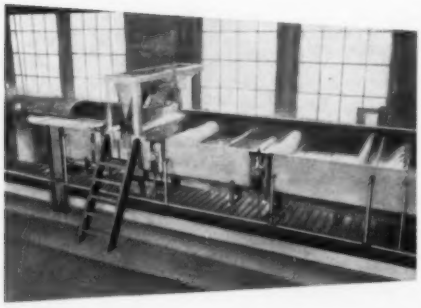
It takes more than a bucket of paint to produce a good CLASSROOM CHALKBOARD



Applying the Rowles Chalkboard writing surface to the base stock.



Preliminary rubbing and tapping of the writing surface.



Final processing step completing the famous Rowles Velvetone Writing Surface.

50 years of know-how plus $200,000 of production equipment makes the big difference at ROWLES

The simplicity of a product—as in the case of Classroom Chalkboards—is often misleading!

Producing a chalkboard that will give satisfactory service throughout the years calls for much more than the simple possession of a bucket of paint and a supply of base stock.

Rowles has an investment of over $200,000.00 in specialized production equipment designed expressly to produce the finest type of classroom chalkboard. To this, add Rowles half century of technical experience in manufacturing chalkboards for the classrooms of the nation—and you'll easily understand and appreciate that there must be a difference . . . a big difference in classroom chalkboards.

Why take a chance on an unknown? Instead, specify a Rowles Chalkboard for assured protection and satisfaction throughout the years. Remember, every Rowles Chalkboard is fully and unconditionally guaranteed for 10 years.

You'll find five quality chalkboards to select from—ENDURAROC, DURABEST, PERMASITE, SUPER PERMASITE AND DUROPLATE—in See-GREEN or standard black.

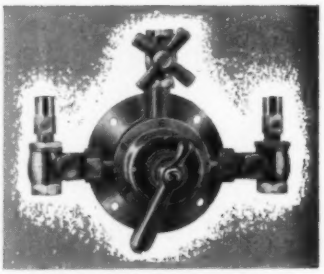
WRITE FOR THIS FREE KIT: On your business letterhead, ask for this complete kit containing actual samples of all Rowles Chalkboards and Corkboards.

E. W. A. ROWLES COMPANY

ARLINGTON HEIGHTS, ILLINOIS

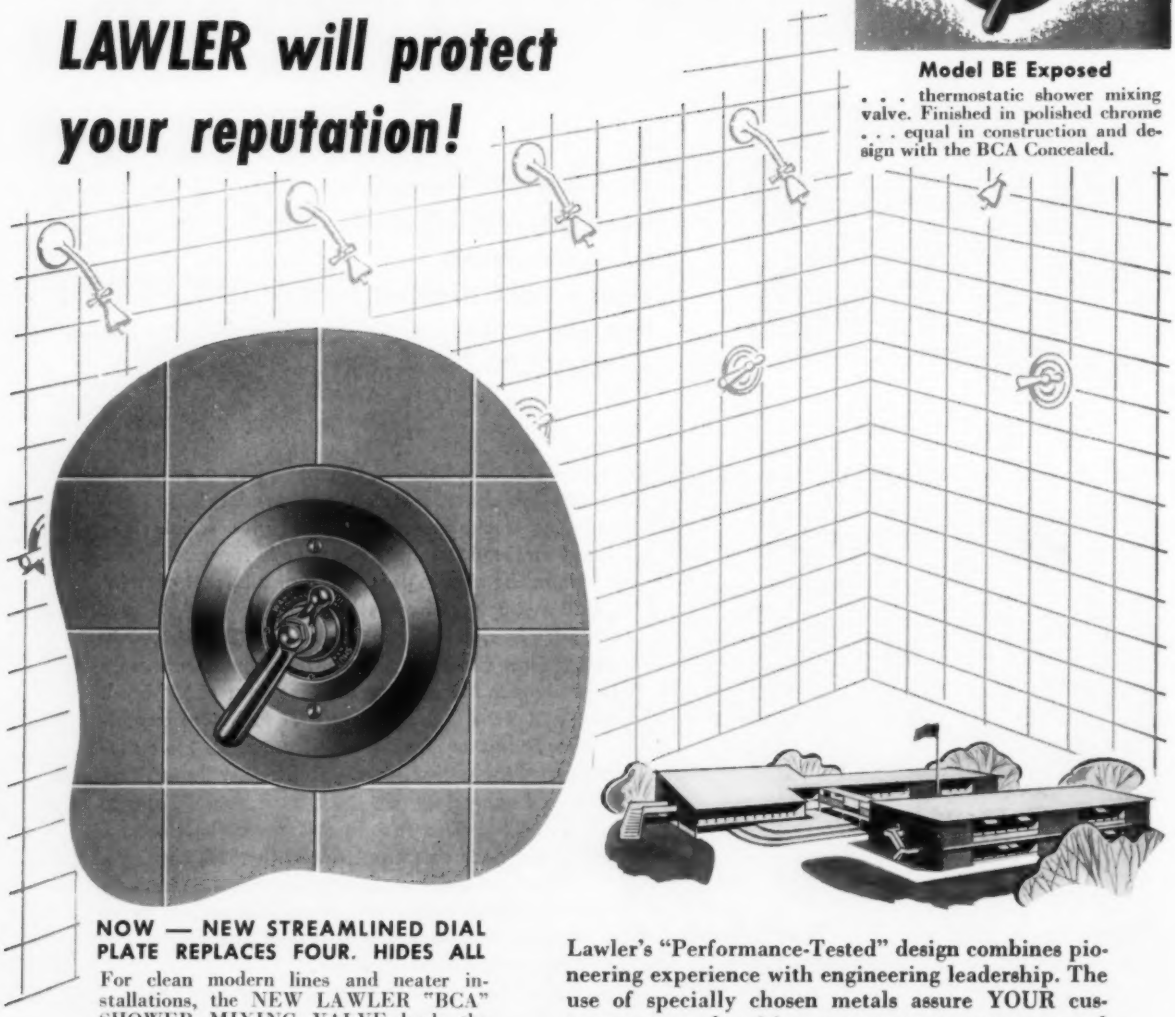
NOW, and TEN YEARS from now–

LAWLER will protect your reputation!



Model BE Exposed

. . . thermostatic shower mixing valve. Finished in polished chrome . . . equal in construction and design with the BCA Concealed.



NOW — NEW STREAMLINED DIAL PLATE REPLACES FOUR. HIDES ALL

For clean modern lines and neater installations, the NEW LAWLER "BCA" SHOWER MIXING VALVE leads the field. Valve, stops and checks with strainers now appear as one unit . . . *concealed behind the dial plate, yet readily accessible.* Exposed parts finished in polished chrome. Internal sliding parts are stainless steel.

Lawler's "Performance-Tested" design combines pioneering experience with engineering leadership. The use of specially chosen metals assure YOUR customers years of positive, accurate temperature control with lowest maintenance cost . . . the best insurance YOUR REPUTATION can have.

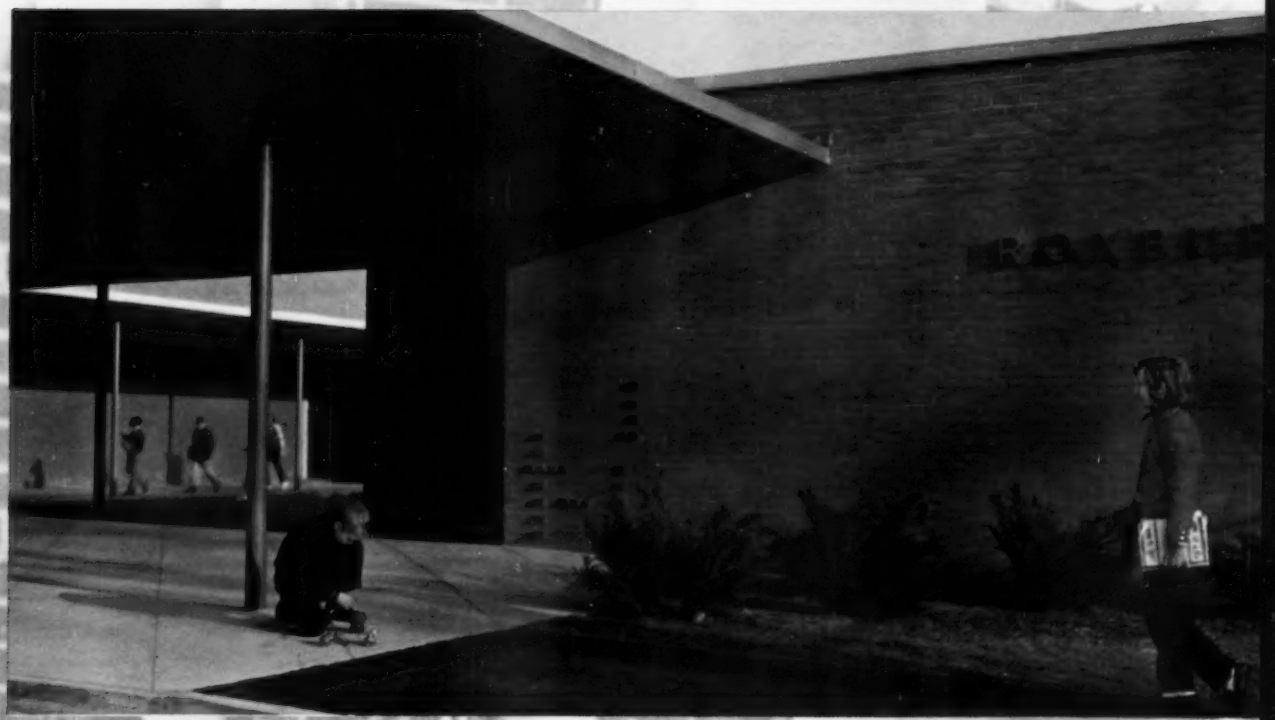
"Performance Tested" for Longer Life

The Lawler Line **of Thermostatic Controls**

LAWLER AUTOMATIC CONTROLS, INC. 453 North MacQuesten Parkway, Mount Vernon, N. Y.

build wisely for them with brick and tile

▼ Roxbury School, Stamford, Conn. Sherwood, Mills and Smith, Architects



combine lowest annual cost – sound construction – lasting human values – in schools for today and tomorrow →

Structural clay meets all these school needs

TRUE ECONOMY

Minimum Maintenance + Low Initial Cost = Low Annual Cost

A school building's actual cost is initial cost *plus* annual maintenance and operating cost. Figured in these terms, structural clay products mean *true* school economy.

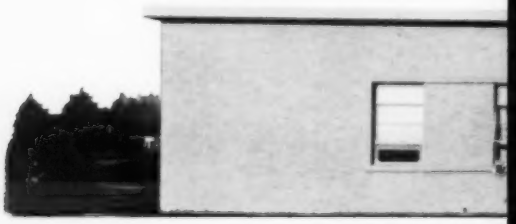
These rugged materials resist abuse and save maintenance costs, inside and out—for the life of the building.

More of the annual school budget is available for education, because less is needed for upkeep. The reverse is true when inferior materials are used in a short-sighted attempt to cut initial construction costs to the bone.

▼ Crow Island School, Winnetka, Ill. Eliel Saarinen, Eero Saarinen, Perkins, Wheeler & Will, Architects

▲ High School, Farmington, Mich. Lyndon & Smith, Architects

Ft. Sam Houston School, San Antonio, Texas Harvey P. Smith & Associates, Architects

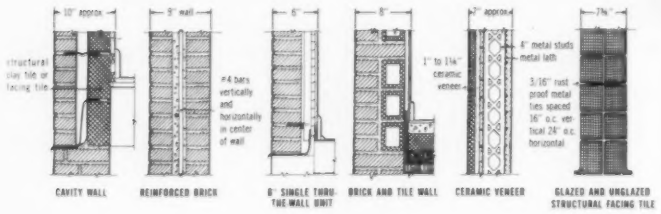


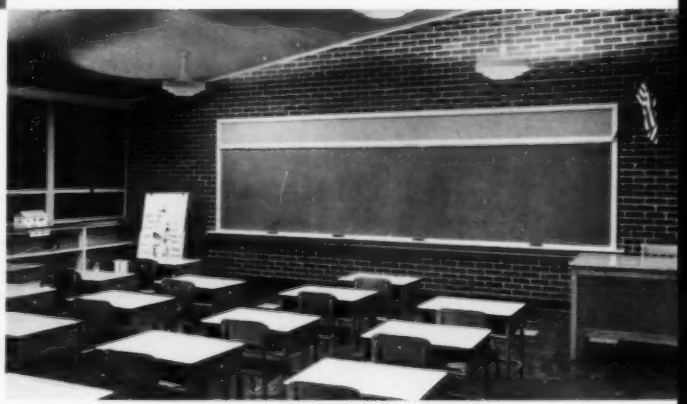
DESIGN FLEXIBILITY

The variety of units, colors and methods of construction offered by clay products gives the architect unique design freedom.

From these many units and construction systems he can make a selection which best fits the budget, the local climate, and other structural and design requirements.

There's a way with clay for every need. Shown here are only a few of the many wall types available.



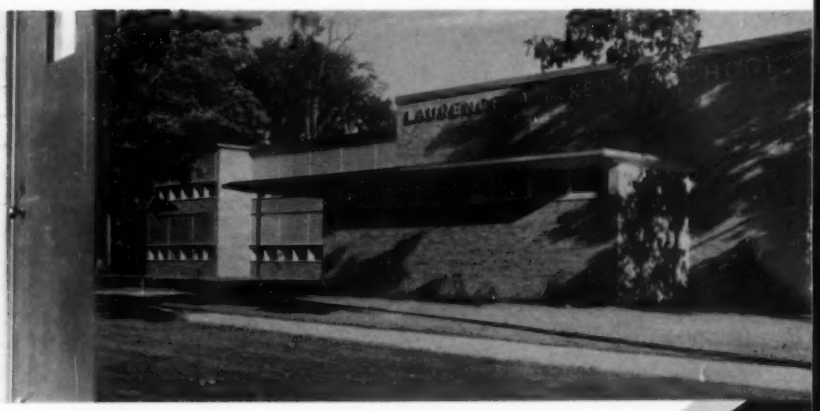


▲ Rushton Public School, Mission, Kansas Donald Hollis, Architect

STRUCTURAL CLAY PRODUCTS INSTITUTE

▼ St. Theresa School, Houston, Texas Golemon & Rolfe, Architects

▼ McKenny School, Detroit, Michigan Eberle M. Smith, Architect



PROPER ENVIRONMENT

The warm, familiar colors of brick and the soft ceramic shades available in terra cotta and facing tile help the designer create a friendly, psychologically helpful school environment.

Use of clay products for both exteriors and interiors contributes to design harmony and gives wide latitude in achieving the effects of color and scale desired.

Schools built of brick and tile also help inspire civic pride and confidence that pupils and teachers have the best surroundings for their work.

SAFE CONSTRUCTION

Because time-proved methods of brick and tile construction have been successfully combined with new technology, clay products have an enviable reputation for dependable, safe construction.

They combine maximum fire safety for schools with low initial cost, low maintenance and durability. Fire resistance ratings of brick and tile walls have been established by standard fire tests and performance has been proved through years of service.

BRICK
your best buy for building
STRUCTURAL TILE

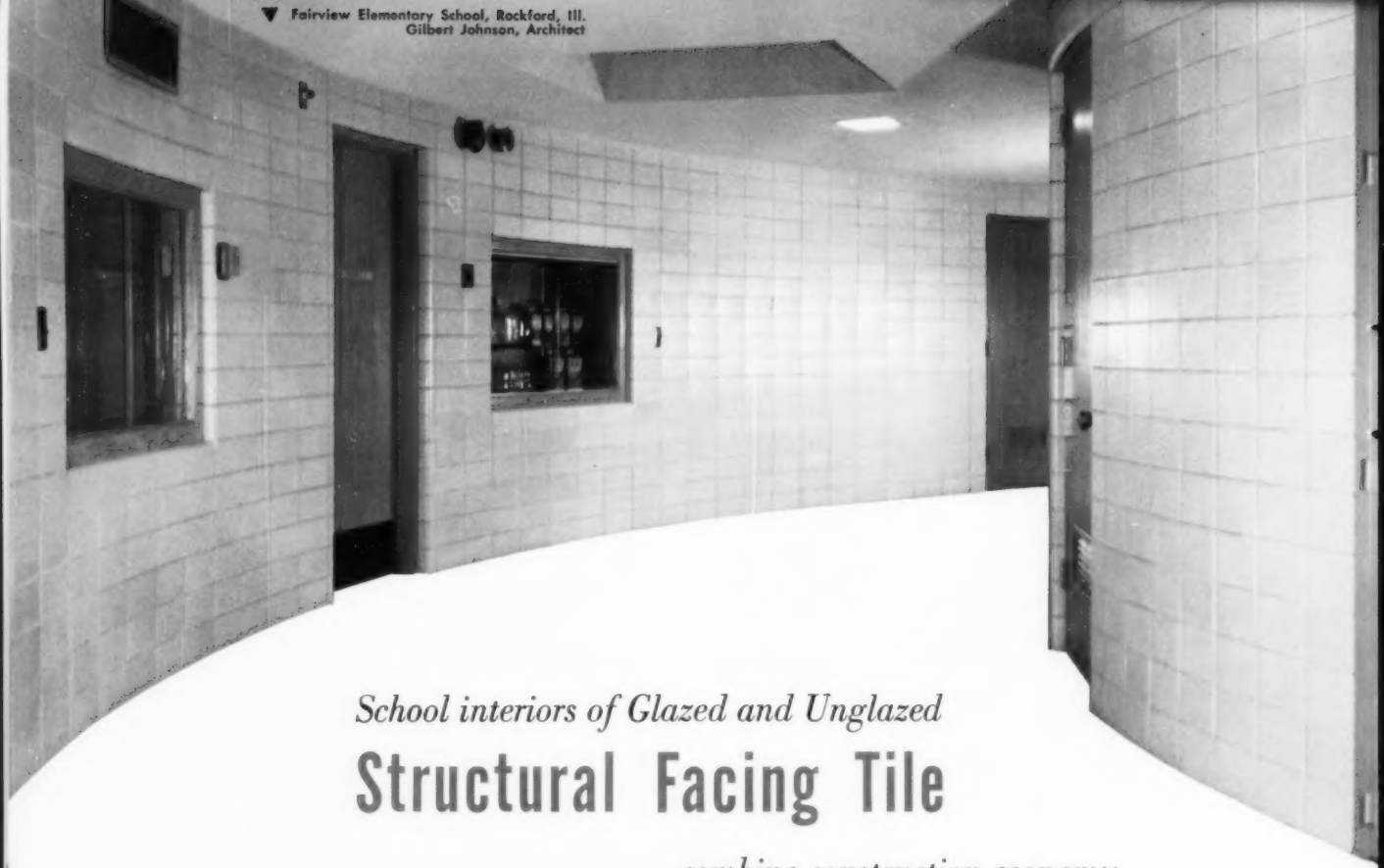
Trademark SCPI

LOOK FOR THIS EMBLEM

Displayed by dealers who are contributing to a nationwide program designed to help you build better and at lower cost with brick and tile.

Structural Clay Products Institute

1520 18th Street, N. W., Washington 6, D. C.



▼ Fairview Elementary School, Rockford, Ill.
Gilbert Johnson, Architect

School interiors of Glazed and Unglazed

Structural Facing Tile

combine construction economy...
soft, ceramic colors...
rugged, easily-cleaned finish

▲ King Philip Drive School, W. Hartford, Conn. Ebbels, Frid & Prentice, Architects

You can solve so many special school building problems with this single, multi-use material... structural clay with a ceramic finish that resists hardest usage, eliminates painting, makes cleanliness easy.

Facing Tile builds wall and finish in a single operation—quickly and economically.

Only your design skill is needed to convert these basic assets into school interiors that children, teachers and parents will be proud of.

FACING TILE INSTITUTE

2556 Clearview Avenue, N. W., Canton 5-5329, Canton 8, Ohio

FTI STRUCTURAL

In the interest of better Facing Tile construction the companies listed here have contributed to the preparation of this advertisement.

CHARLESTON CLAY PRODUCTS CO.
Charleston 22, West Virginia

THE CLAYCRAFT CO.
Columbus 16, Ohio

MAPLETON CLAY PRODUCTS CO.
Canton, Ohio

METROPOLITAN BRICK, INC.
Canton 2, Ohio

MCNEES-KITTANNING CO.
Kittanning, Pennsylvania

NATCO CORPORATION
Pittsburgh 22, Pennsylvania

STARK CERAMICS, INC.
Canton 1, Ohio

WEST VIRGINIA BRICK CO.
Charleston 24, West Virginia

▲ Custer High School, Milwaukee, Wisc. Grossold & Johnson, Architects

Solve The "After-Hours" Heating Problem with JOHNSON *DUAL* CONTROL

The *Dual* System of Johnson Automatic Temperature Control is the modern answer to the special comfort and economy requirements of today's schools. The specially planned system installed at William H. Holmes School* illustrates why:

COMFORT. Strategically located Johnson *Dual* Thermostats in every room insure ideal temperatures to satisfy the exact needs of the occupants, day and night. Convectors and the central heating and ventilating systems are under precision control at all times. For added comfort, air for ventilation is properly humidified before delivery. Special indoor-outdoor controllers anticipate the need for more or less heat in accordance with outdoor temperature. There is no overheating, no underheating. Comfort is uninterrupted!

ECONOMY. When regular school hours end, each of three groups of *Dual* Thermostats are reset —from a central point—to operate at lower, non-occupancy temperatures. In those rooms which continue in use, merely pressing a button on the room's *Dual* Thermostat restores it to normal occupancy temperature, *without changing the economy settings of the other thermostats.* With Johnson *Dual* Control, "after-hours" heating problems are a thing of the past!

Further savings, day and night, are made possible by Johnson Master-Submaster Thermostats which compensate for changes in outdoor temperatures and limit heat output to actual requirements.

Johnson *Dual* Control eliminates heat waste and insures the maximum return for every fuel dollar—yet there is comfort unlimited!

To learn how the unique comfort and fuel-saving advantages of Johnson *Dual* Control can be applied to any new or modernized building, talk to an engineer from a nearby Johnson branch. His recommendations are yours without obligation. JOHNSON SERVICE COMPANY, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.

*William H. Holmes School, Mt. Vernon, New York. Emilio John Di Rienzo and Warren S. Holmes Company, architects; A. H. Karl & Bros., heating contractor; all of Mt. Vernon.

JOHNSON CONTROL
TEMPERATURE AIR CONDITIONING

PLANNING • MANUFACTURING • INSTALLING • SINCE 1885

100 MPH WIND
90 MPH WIND
78 MPH WIND
72 MPH WIND
55 MPH WIND
1.25 C.F. AIR PER HR.
0.91 C.F. AIR PER HR.
0.72 C.F. AIR PER HR.
0.62 C.F. AIR PER HR.
0.49 C.F. AIR PER HR.
0.27 C.F. AIR PER HR.
WALL COVERED WITH HOMASOTE

Air penetration proves no need for building paper

For basic economy in Sheathing

It's different!

When a builder eliminates a dozen costly details — *with better end results* — he is getting basic economy. This is Homasote economy. The Homasote Handbook — Page 28 —says:

"For real economy the $^{15}/_{32}$" (Homasote) is the right material for all types of finished exteriors — such as brick veneer, siding, clapboard, or stucco. If the builder uses the Big Sheets in the proportion of one-third 8′ x 14′s and two-thirds 8′ x 12′s, he will find that he comes out with no waste at all. The cutouts from windows or doors may be used as closet ceilings, plaques, soffits of stairwells, as well as exterior soffits."

With the Big Sheets, racking tests by independent laboratories show there is no need for corner bracing. Weatherproof Homasote needs no building paper, as the air penetration tests above demonstrate. Homasote **know-how** reduces material and labor costs.

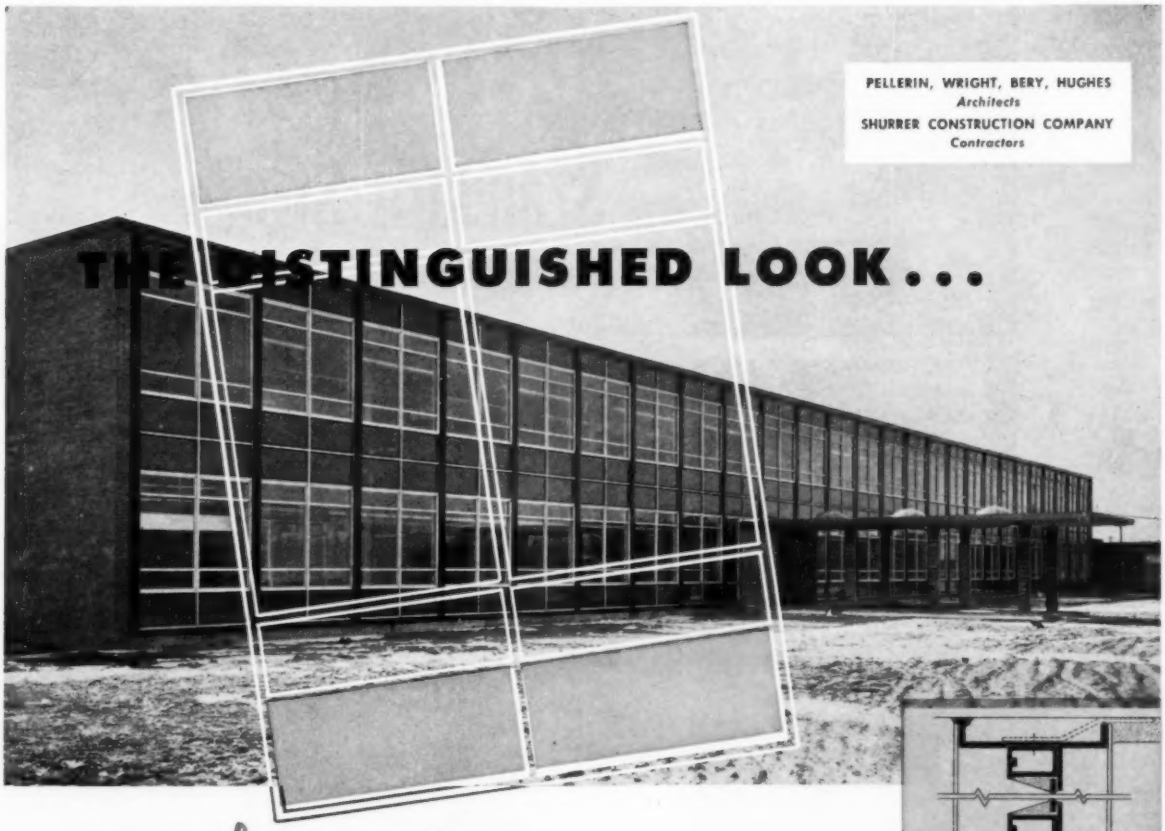
The famous One-Man Sheathing, in V-grooved 2′ x 8′ panels, is another Homasote sound building value.

The Homasote Handbook gives you the right answers to 100 construction problems. We have confidence in its basic value. Homasote *is* different — in both product *and* **know-how**.

May we send you a copy — without cost or obligation? Kindly address your inquiry to Department D-14.

See our products in the NATIONAL HOUSING CENTER WASHINGTON, D.C.

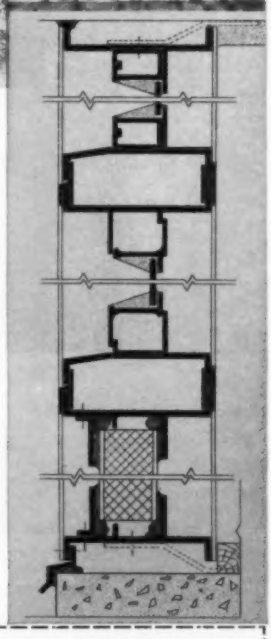
HOMASOTE COMPANY
TRENTON 3, NEW JERSEY



PELLERIN, WRIGHT, BERY, HUGHES
Architects
SHURRER CONSTRUCTION COMPANY
Contractors

THE DISTINGUISHED LOOK...

WITH *low-cost* VAMPCO WINDOW WALL CONSTRUCTION



The "distinguished look" of tomorrow is here today with exclusive beauty and functional design in this new Lawrence Institute of Technology building at Oakland Co., Michigan. Heavy Vampco Window Construction using 4½ inch deep sections gives its massive Window Wall expanse an extremely modern and most pleasing appearance. Porcelain enamel panels are set into the sections at the spandrels and also form attractive borders. These Vampco Windows were furnished assembled in large, full height sections for economical installation. For extra strength, durability and beauty at low cost, architects and contractors everywhere are turning to Vampco. Our special designing department is at your service . . . . . WRITE TODAY!

VALLEY METAL PRODUCTS CO.

PLAINWELL, MICHIGAN

SUBSIDIARY OF MUELLER BRASS CO., PORT HURON, MICHIGAN

Now in Canada

VAMPCO ALUMINUM PRODUCTS, Ltd.
STRATHROY, ONTARIO

See Complete File in Your Current Sweet's Catalog

VAMPCO®
A NAME THAT MEANS THE VERY FINEST IN LIFELONG ALUMINUM WINDOWS

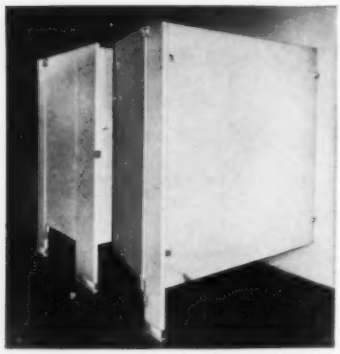
VALLEY METAL PRODUCTS COMPANY
Dept. AR-46, Plainwell, Mich.

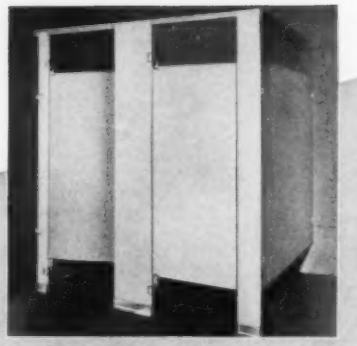
☐ Send 48-page Industrial-Institutional Window Catalog.
☐ Send Light Construction Aluminum Window Catalog.

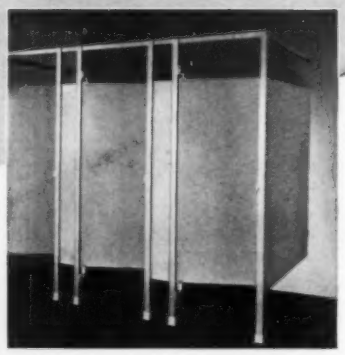
NAME.....

COMPANY.....

ADDRESS.....







Standard Stock

in standard colors

for QUICK DELIVERY!

Elementary School sizes . . . with concealed hinges

Now . . . Nicholson Toilet Compartments are stocked in standard styles and colors for quick delivery "from stock."

Modern production facilities, housed in a new 67,000 square-foot plant, are busy building up a standard-size stock of these three most popular styles. From ultra-modern to rugged utility designs, you can get the toilet compartments you need in a hurry.

You can specify better-built compartments . . . Nicholson compartments . . . and have them shipped *right away!* No waiting. No delay in completion of important contracts.

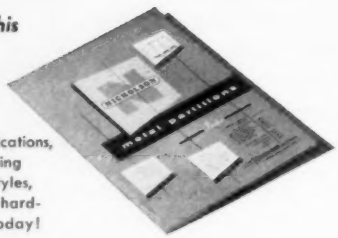
Specify Nicholson, for serviceability and service.

Nicholson Toilet Compartments are immediately available in the following types . . . in standard colors:

Type A—floor braced Type AR—overhead braced
Type B—flush style

Specify right from this new Nicholson "tell-all" bulletin!

Contains complete specifications, illustrations and engineering drawings . . . facilities, styles, construction, layouts and hardware. Send for a copy today!



NICHOLSON

W. H. NICHOLSON and Company

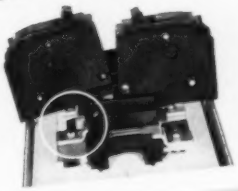
METAL PARTITIONS • TRAPS • VALVES • FLOATS

14 OREGON STREET, WILKES-BARRE, PA. • SALES AND ENGINEERING OFFICES IN 90 PRINCIPAL CITIES

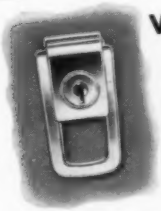
QO FINEST BREAKER EVER BUILT ....NOW IN LOAD CENTERS!

You can't go wrong!

Projections on the insulated barriers prevent installation of wrong amperage breakers unless the barrier is modified. This modification is simple and can be done with a twist of the wrist.

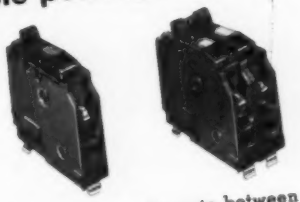


Want to Lock It?



The spring catch can be replaced by a flush panel type lock, shown at left, by simply removing a twist-out. This lock may be "keyed" to match Square D panelboards.

Double poles go anywhere!



Shielded connectors alternate between buses, giving distributed (sequenced) phasing. As a result, two pole common or individual trip breakers can be plugged in anywhere.

• A complete line of load centers for residential, commercial and light industrial applications is already on your Square D distributor's shelf. Available with doors in 12, 20, 30 and 42 circuit basic devices—1 phase, 3 wire; or 3 phase, 4 wire. Lugs only, split bus or main breaker types. Flush, surface and raintight enclosures. UL approved and meets Federal Specifications WP-131A, Class A.

2 through 8 Circuits

For services requiring less circuits, a line of 2, 4, 6 and 8 circuit basic devices, without doors, for 1 phase, 2 wire; or 1 phase, 3 wire. Flush, surface and raintight enclosures. (8 circuit device shown at right)

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

COOLITE GLASS GETS ITS COLLEGE DEGREES

Architect: Mitchell & [illegible]
General Contractor: George H. Chilli
Glazing Contractor: Pittsburgh Plate Glass Company

Solar Heat and Glare Held to Minimum by Mississippi Glass in University Dormitory

Donner Hall, Carnegie Institute of Technology's new men's dormitory will be bright with daylighting without the unnecessary discomfort of excess solar heat. In keeping with modern architectural trends, this outstanding structure will feature extensive use of large areas of ¼" Mississippi Coolite, Heat Absorbing, Glare Reducing glass in both front and rear elevations. Under this excellent arrangement all rooms will be flooded with copious quantities of softly diffused, glare reduced daylight for maximum seeing comfort. The rooms will seem larger, more restful, more cheerful.

With its cool, blue color, translucent, light diffusing Coolite glass compliments the modern design of the building, and Coolite will help keep interior temperatures comfortable by absorbing up to 50% of solar heat rays. Students will see better, feel better, work better in the atmosphere created by Coolite-conditioned natural lighting.

When you build or remodel your school buildings, make better daylighting a part of your plans. Specify glass by Mississippi. Available in a wide range of patterns and surface finishes to meet any lighting need within any school budget.

Write today
for Free Literature.
Address Dept. 7.

Mississippi constantly tests daylighting applications of its glass in a schoolroom erected on factory grounds. Results of these tests and assistance of Mississippi technicians are available to you upon request without charge.

MISSISSIPPI
GLASS COMPANY
88 Angelica St. • St. Louis 7, Mo.
NEW YORK • CHICAGO • FULLERTON, CALIFORNIA

WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

Give them the NAME THEY KNOW!

Air Conditioning and Heating

by

FRIGIDAIRE

DIVISION OF GENERAL MOTORS

Have you this FRIGIDAIRE Fact Packet?

This Architect and Builder's Portfolio of Products is filled with complete data on the eleven different Frigidaire conditioning units for both warm weather and all-year use. Places every useful fact at your finger tips. Write or wire for your packet today.

* *And all of this is equally true of the complete line of FRIGIDAIRE Gas and Oil Furnaces.*

Full-home air conditioning is no longer a novelty, and today's home owners don't have to be content with unknown or little-known names. They look for the name they know and trust—and more people know and trust the name FRIGIDAIRE than any other name in refrigeration and air conditioning.

Put this fact to work for you as you offer home owners the great advantages of full-home air conditioning. Add the word FRIGIDAIRE and you add a world of prestige and power—and earn the respect of the millions who own and enjoy the great variety of General Motors products.

Features? All Frigidaire Conditioning units are packed with them—and we provide you with facts about each and every one. But even more important is the single word best known to all America. Not just air conditioning. Air conditioning by FRIGIDAIRE!*

FRIGIDAIRE DIVISION, GENERAL MOTORS CORPORATION, DAYTON 1, OHIO

FRIGIDAIRE FULL-HOME *Conditioners*

GENUINE GM VALUES

Magney, Tusler and Setter— ARCHITECTS
Surface type Norton Door Closers installed as original equipment in 1929 are still in regular service.
FOSHAY
FOSHAY

NORTON DOOR CLOSER DEPENDABILITY—Graphically Demonstrated by 27 Years of Continuous Service in the Celebrated

FOSHAY TOWER

...MINNEAPOLIS, MINNESOTA

Only The "INADOR" Offers All These Exclusive NORTON Features:

Rack and Pinion Construction gives uniform, positive checking at every point!

New Aluminum Shell for lighter weight, robust wear. Proved by use on our surface closers for over 7 years!

Special Spring—of highest-quality steel!

Non-Gumming, Non-Freezing Hydraulic Fluid permanently lubricates every moving part!

Double Adjusting Levers, easily moved by fingers, control speed of closing action and latching action!

Regular Arm Series, as well as Holder Arm Models, so suitable for hospital use!

Famous Guarantee for 2 full years, provided proper recommended sizes are used!

Write today for FREE CATALOG on full Norton Line of concealed and surface door closers.

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DOOR CLOSERS

Dept. AR-46, Berrien Springs, Mich.

Over 75 years of Leadership in Door Closers

*This is not an idle claim . . . it's a fact . . . PROVEN UNDER ACTUAL INSTALLATION AND MAINTENANCE CONDITIONS.

Make no mistake about it . . . no matter how small your filter requirements . . . or how large, here is a completely new air filter development that can absolutely cut your clean air maintenance costs in half.

NO HEAVY TENSION OIL—Evans filters do not have a messy, sticky type of adhesive that is filthy to handle and difficult to clean. It is unnecessary and is forbidden in the use of Evans filters.

CLEAN WITH TAP WATER—Evans filters can be cleaned clean in minutes with nothing ever but tap water sprayed through an ordinary garden hose nozzle. They require no expensive fireproof room. No caustic cleaning solutions or agents. This eliminates all danger in the cleaning of Evans filters.

LIGHT WEIGHT CUTS LABOR COSTS—Evans filters are all aluminum. Light to handle, to carry, to pick up. In spite of airtight fitting frames, Evans filters pull quickly and easily in and out of the frames. Take much less effort, less labor to handle. No latches . . . or lugs required.

REMEMBER: Initial costs for air cleaning equipment are not the big factors or controlling factors in the cost for clean air.

IT'S OPERATING COSTS THAT YOU MUST LIVE WITH AND THAT YOU MUST CONTROL.

EVANS FILTERS GIVE YOU THAT CONTROL. MAKE IT POSSIBLE FOR YOU TO SAVE 50% ON CLEAN AIR MAINTENANCE COSTS.

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- EVERY PART PRECISION MADE
- HOLD UP TO 200% MORE DUST AND LINT WITHOUT HARMFUL RESTRICTION TO AIRFLOW
- GIVES LIFETIME SERVICE

FREE CATALOG

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THE GEORGE EVANS CORPORATION • MOLINE, ILLINOIS

Gentlemen: I wish to know how to cut my clean air maintenance costs in half with a filter that gives lifetime service. Please send me new illustrated catalog.

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Evans

Lifelong AIR FILTERS

3325 WILSHIRE BUILDING, *Los Angeles, California*
OWNER AND BUILDER: *Tishman Realty and Construction Co., Inc. New York and Los Angeles*
ARCHITECT: *Victor Gruen, A.I.A., Los Angeles, New York and Detroit*

serving the architect, and owner-builder
with metal wall engineering and production quality

This new 13-story office building will be completely air-conditioned. To admit maximum natural light without the discomfort of glare and direct sunlight, the building has been designed with projecting horizontal sunshades on the south and north elevation, and vertical louvers on the east and west elevation. The complete aluminum wall framing and vertical louvers will be Kawneer engineered and produced, saving the architect and builder months of time and giving them the assurance of client satisfaction. Special Kawneer weather-tightness plus expansion and contraction features will be included.

Have you a metal wall problem? Why not delegate the whole responsibility to Kawneer. Five plants in the United States and Canada, a complete engineering staff, and 50 years of experience in architectural metals are waiting to serve you.

Write for folder describing Kawneer services and metal wall jobs.

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The HIGBEE Company

FAMOUS CLEVELAND STORE

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Ruggedness and efficiency were the determining factors in the selection of McQuay Ripple-Fin Coils to provide Cleveland's famous Higbee Department Store with 2,800 tons of air conditioning. McQuay Heating Coils also supply the necessary heating requirements.

Ripple-Fin construction, an exclusive feature of McQuay Coils, produces a ripple air flow pattern assuring a closer and longer contact between the air stream and the coil surface, thereby preventing air by-pass and producing more rapid heat transfer. They have higher flexible strength with minimum air friction and cleaner operation.

McQuay Coils are available in a wide variety of styles and sizes; both standard and special coils for steam, hot water, cold water, brine, direct expansion, refrigerant condensing and other applications.

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REPRESENTATIVES IN PRINCIPAL CITIES OR WRITE McQUAY, INC., 1605 BROADWAY NORTHEAST, MINNEAPOLIS 13, MINNESOTA

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times a year—

year after year!

HAGER *Butt Hinges*

meet the most exacting

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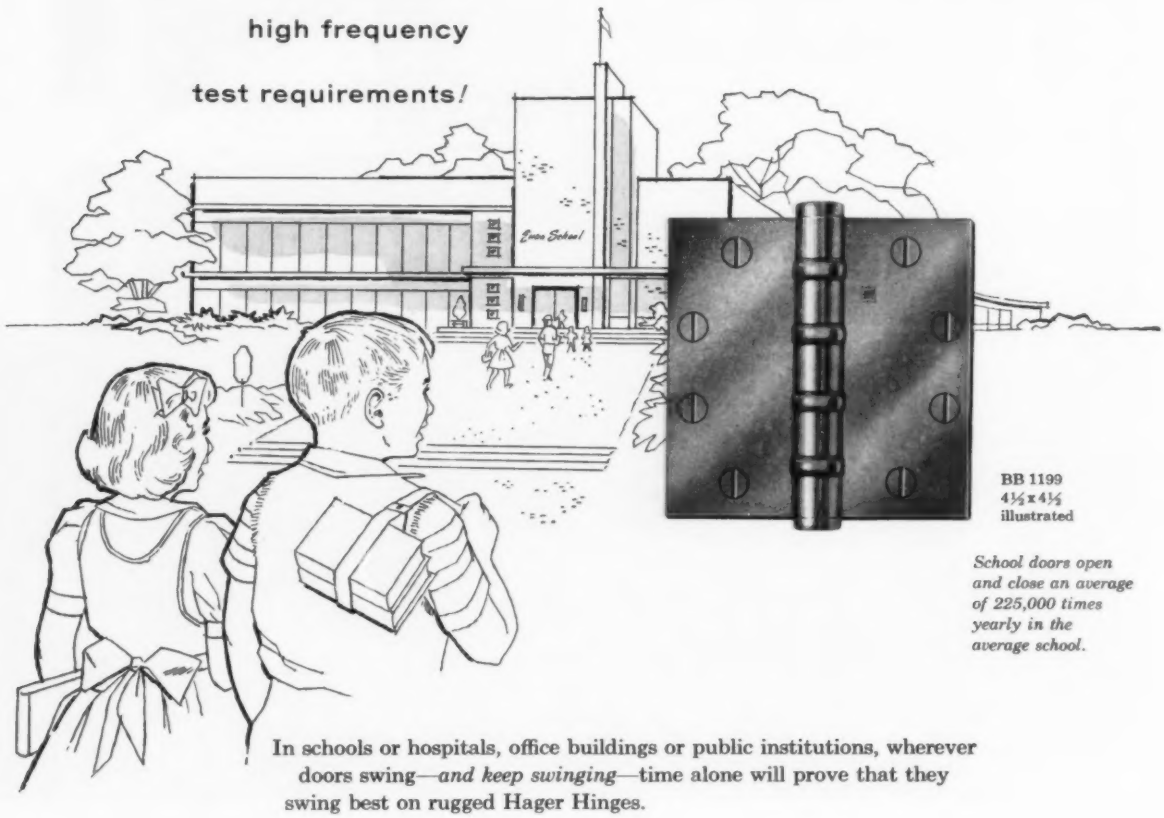

BB 1199
4½ x 4½
illustrated

School doors open and close an average of 225,000 times yearly in the average school.

In schools or hospitals, office buildings or public institutions, wherever doors swing—*and keep swinging*—time alone will prove that they swing best on rugged Hager Hinges.

Architects and specifiers who demand exacting performance *know* the reputation for strength and stamina of Hager Butt Hinges as intimately as their own slide rules. With the experience of years of tests and analysis, they've learned that *Hager engineered Butt Hinges meet the test of time for heavy traffic loads.*

Specify Hager Butt Hinges for *your* next job. They're tough! They're rugged . . . and every Hager Hinge swings on 100 years of experience!

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T. M.

VISQUEEN film—*the* permanent moisture vapor barrier actually costs less to buy... costs much less in place than other types. It will not deteriorate when in place—lasts for the life of the building it protects. What's more, it's light and easy to handle (1,000 sq. ft. of 4 mil weighs less than 20 pounds.)

Extra wide widths, up to 32 feet, let you get your moisture barrier on the ground at much lower cost. No mopping necessary. No joint sealing needed—6″ lap does the trick. VISQUEEN's flexibility at *all* outdoor temperatures means much less time spent with corners and openings. Result: Drastically reduced labor costs for you and *permanent* moisture protection for clients.

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Only VISQUEEN film can offer you so many money-saving advantages. Get all the facts by mailing this coupon!

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World's largest producer of polyethylene sheeting and tubing.

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NEW GRADE NAMES FOR WEST COAST LUMBER *are NOW in effect*

Boards, Dimension and Timbers of Douglas fir, West Coast hemlock, Western red cedar and Sitka spruce now have grade names instead of numbers as shown below:

NO. 1 . *becomes* **CONSTRUCTION** — MILL 750 WC LB CONST

NO. 2 . . . . . *becomes* **STANDARD** — MILL 750 WC LB STAND

NO. 3 . . . . . *becomes* **UTILITY** — MILL 750 WC LB UTIL

NO. 4 . . . . . *becomes* **ECONOMY** — Not Customarily Grade Stamped

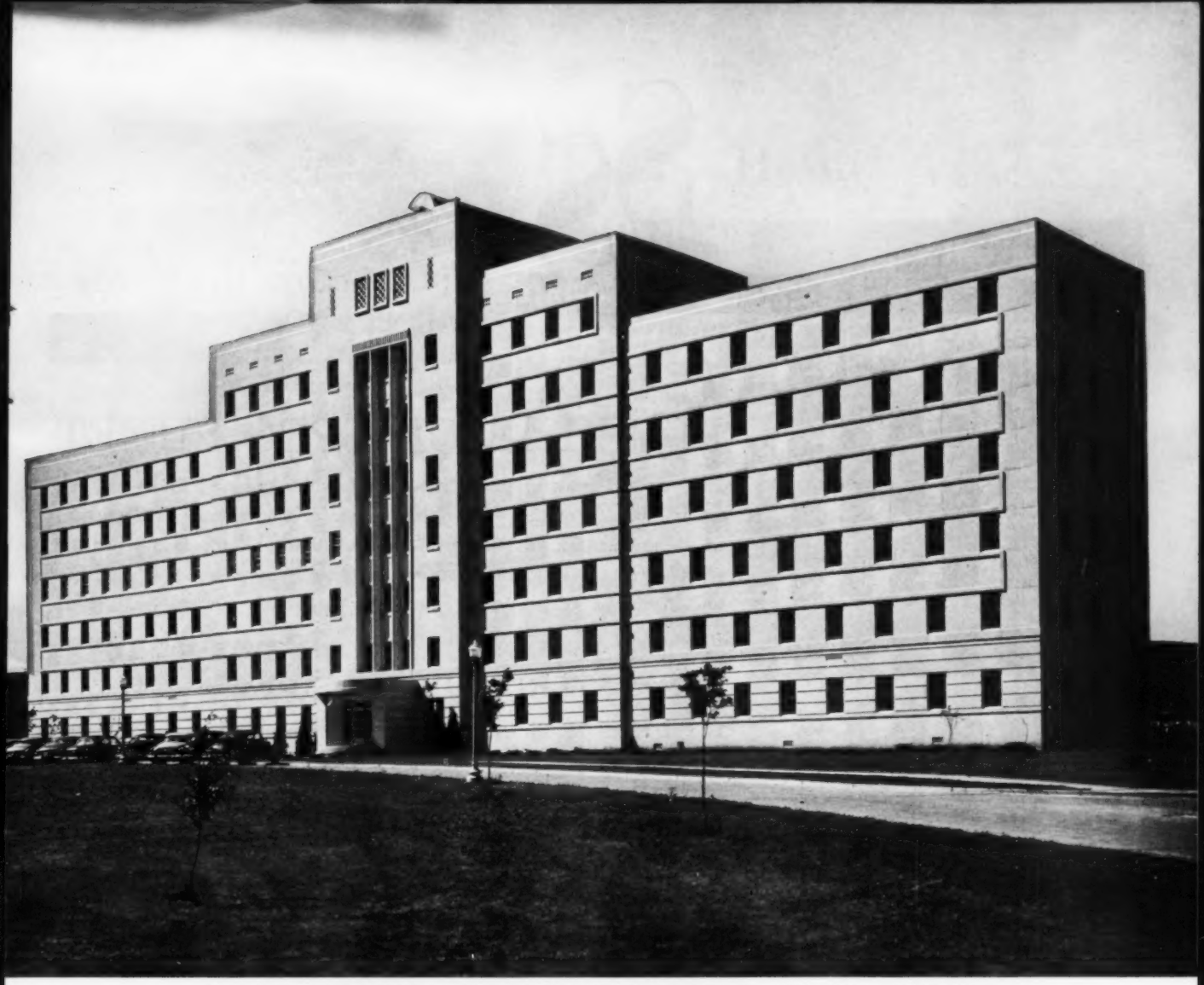
There is no change in the identification of Select Merchantable Boards, Select Structural Dimension and Timbers, or vertical grain Clears.

The top grade of flat grain Clears becomes **C&Btr.** — MILL 750 WC LB C&BTR

For additional information on grades write to:

WEST COAST LUMBERMEN'S ASSOCIATION
1410 S. W. MORRISON, PORTLAND 5, OREGON

All Grade Stamps shown are registered, U. S. Patent Office.



John Moses Veterans Administration Hospital, Minot, North Dakota. Contractor: McGough Bros., St. Paul, Minn.

"Built-in" good looks for architectural concrete

Architectural concrete for this hospital was made with Atlas Duraplastic Air-Entraining Portland Cement. Contractor E. V. McGough found that his mixes were more workable, more cohesive and the resulting concrete was more uniform. Further, with Atlas Duraplastic Cement a better concrete surface appearance was obtained. Since Duraplastic-made concrete has been proved to have increased resistance to freezing-thawing weather, the result is concrete that's easy *to* place . . . concrete that's more durable *in* place. That's why Atlas Duraplastic Cement is preferred by architects and contractors.

YET DURAPLASTIC COSTS NO MORE than regular cement—requires no unusual changes in procedure. Complies with ASTM and Federal Specifications. For descriptive booklet, write:

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UNITED STATES STEEL (USS) CORPORATION SUBSIDIARY

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*"DURAPLASTIC" is the registered trade-mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.

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Atlas® Duraplastic Cement

AF-D-180-C

MAKES BETTER CONCRETE AT NO EXTRA COST

United States Steel Hour—Televised on alternate Wednesdays—See your local newspaper for time and station.

PUT THESE TWO LETTERS . . .

PATENTS PENDING

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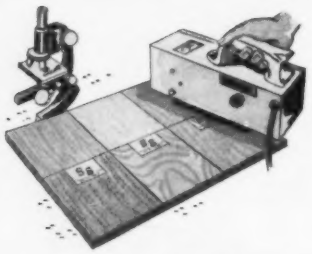
just before the words

"OR EQUAL"

on a

FLUSH DOOR SPEC SHEET

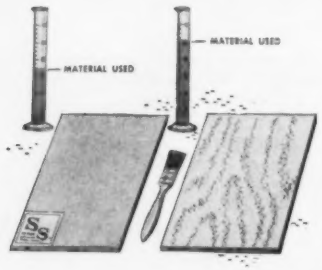


Light meter tests of DOUBLE-S treated panels show up to 100% increase in reflected light.

and you will get a brighter, better finish which not only brings out the natural beauty of the wood but preserves and accentuates the pattern of the grain. Also, you will get a finish of uniform depth into which the marble-smooth DOUBLE-S surface is faithfully projected with complete and brilliant clarity as demonstrated by Light Meter tests here shown.

AND YOU WILL SAVE

UP TO 50% OF THE LABOR AND 30% OF THE MATERIAL IN FINISHING COSTS.

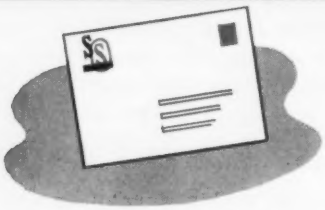


Measured application of finishing material shows 33⅓% saving on panel with DOUBLE-S surfacing.

The exclusive built-in DOUBLE-S polish insures these savings in single as well as special multiple-coat finishes where, in some cases the material costs will be reduced more than 30% and the labor cost considerably more than 50%. The average savings will be 50% labor and 30% material.

DOUBLE-S is now standard surfacing procedure on all General Plywood Gibraltar and Kentucky Colonel Hot Pressed Flush Doors.

MAY WE SEND YOU



A DESCRIPTIVE BOOKLET on the dramatic new DOUBLE-S surfacing process and its apparently limitless prospects not only in Flush Door finishing but wherever fine wood finishing is required. Just fill out the coupon and drop it in the mail. Meanwhile, the next time you write a FLUSH DOOR specification, put in DOUBLE-S just before the words "Or Equal". YOU'LL NEVER REGRET IT.

GENERAL PLYWOOD CORP.
3131 West Market
Louisville, Ky.

Please send me your new pamphlet on DOUBLE-S Flush Doors.

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ADDRESS_____

CITY_____ STATE_____

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LOUISVILLE, KENTUCKY

member national wood-work manufacturing assn., inc.

Every Home . . . . . Cottage or Mansion

Deserves the Permanent Protection of

CAST IRON SOIL PIPE

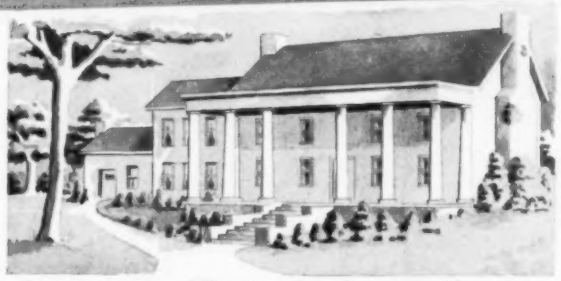
and Fittings

"Can't you figure out some way to cut down the cost?"

Architects or contractors are often asked that question, after final plans are drawn. Usually the home builder wants plans trimmed "where it won't show."

But recognizing their responsibility to clients, reliable architects and contractors refuse to cut down on essentials that are vital to the permanent protection of a home and its enjoyment by the owner.

They know, for instance, that it never pays to compromise on quality in plumbing drainage, which once buried in the ground or house is



there to stay. That's why they specify permanent Cast Iron Pipe even where investment in the home is a very modest one.

Permanent Cast Iron Pipe costs a little more, but its first cost is *final*. It will last forever, never need root reaming or break down under heavy truck loads or ground settlement. Through the years it will perform its function —smoothly and without care or trouble.

When Cast Iron Pipe is specified — inside and out — there will never be any come-backs or complaints.

★ ★ ★ ★ ★ ★ ★

Our Company does not manufacture Cast Iron Pipe, but supplies many of the nation's leading foundries with quality pig iron from which pipe is made.

WOODWARD IRON COMPANY

WOODWARD, ALABAMA

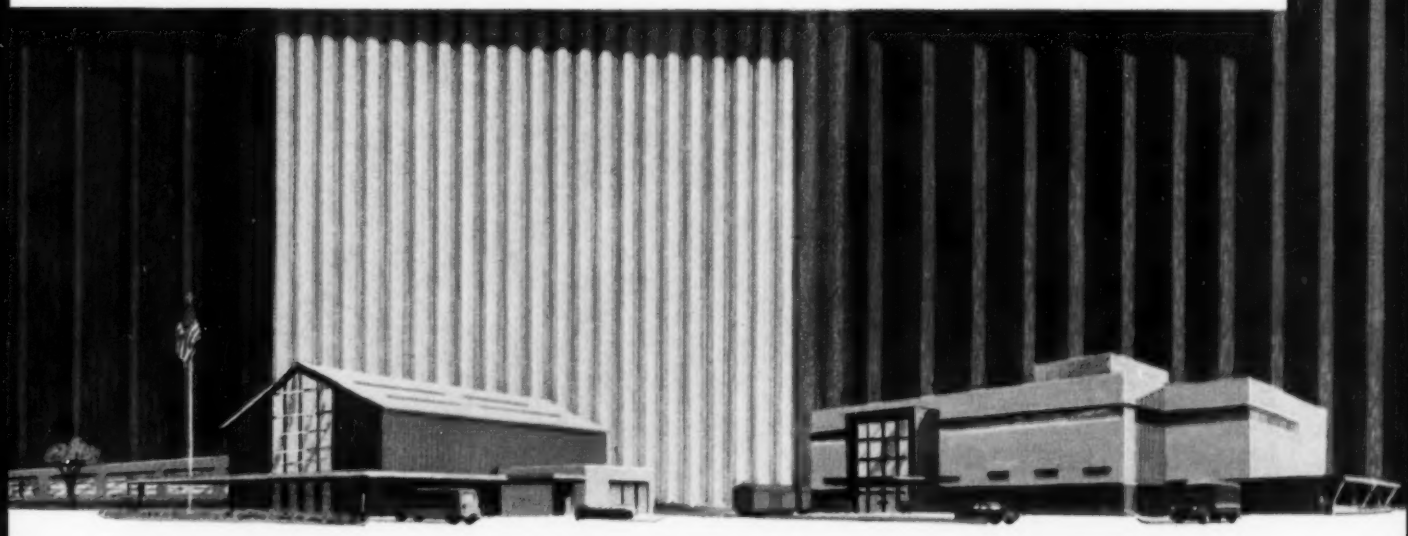
This famous protected-metal roofing and siding will now add permanent low-cost beauty to your buildings!

After decades of research and more than seven years of exhaustive tests held under the auspices of its multiple fellowship at the famed Mellon Institute of Industrial Research, H. H. Robertson Company is proud to announce Galbestos roofing and siding in four attractive new colors—red, green, buff, gray. Standard Galbestos with its black or maroon surface has long been the standard of perfection among protected metal products for its long-life, resistance to fire and corrosion, and ability to withstand extreme weather conditions. Color Galbestos has proven itself equal or better in every respect.

Because the surface of Color Galbestos is permanent and maintenance-free, you can now specify colored roofs and sidewalls at a much lower cost than that possible by any other means. With the new colors and the three standard corrugations shown at the right, used singly or in combination, a whole new field of decorative treatment for industrial and commercial structures has been opened. Use the coupon on the opposite page to write for literature.

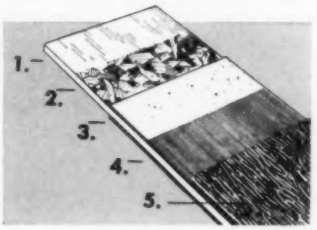
Pioneering in World-Wide Building Service Since 1906

Color Galbestos



The exclusive Galbestos method of protecting steel is responsible for its extreme durability. First the steel core (1) is pickled and dipped in a bath of molten zinc. (2) Immediately a layer of asbestos felt (3) is pressed on so that when the zinc hardens, the asbestos fibers are gripped in absolute metallic bond. Next, the asbestos is impregnated with an asphaltic compound (4), and a tough, waterproof coating (5), in one of the six Galbestos colors is applied to the surface. You can be assured that freedom from maintenance has been built-in when you specify Galbestos.

Color Galbestos can be furnished colored on one or both sides . . . in flat sheets or in corrugations shown below.



Robertson

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2404 FARMERS BANK BUILDING
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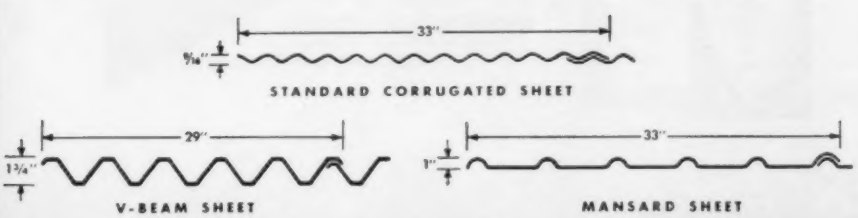

Please send additional information on Color Galbestos.

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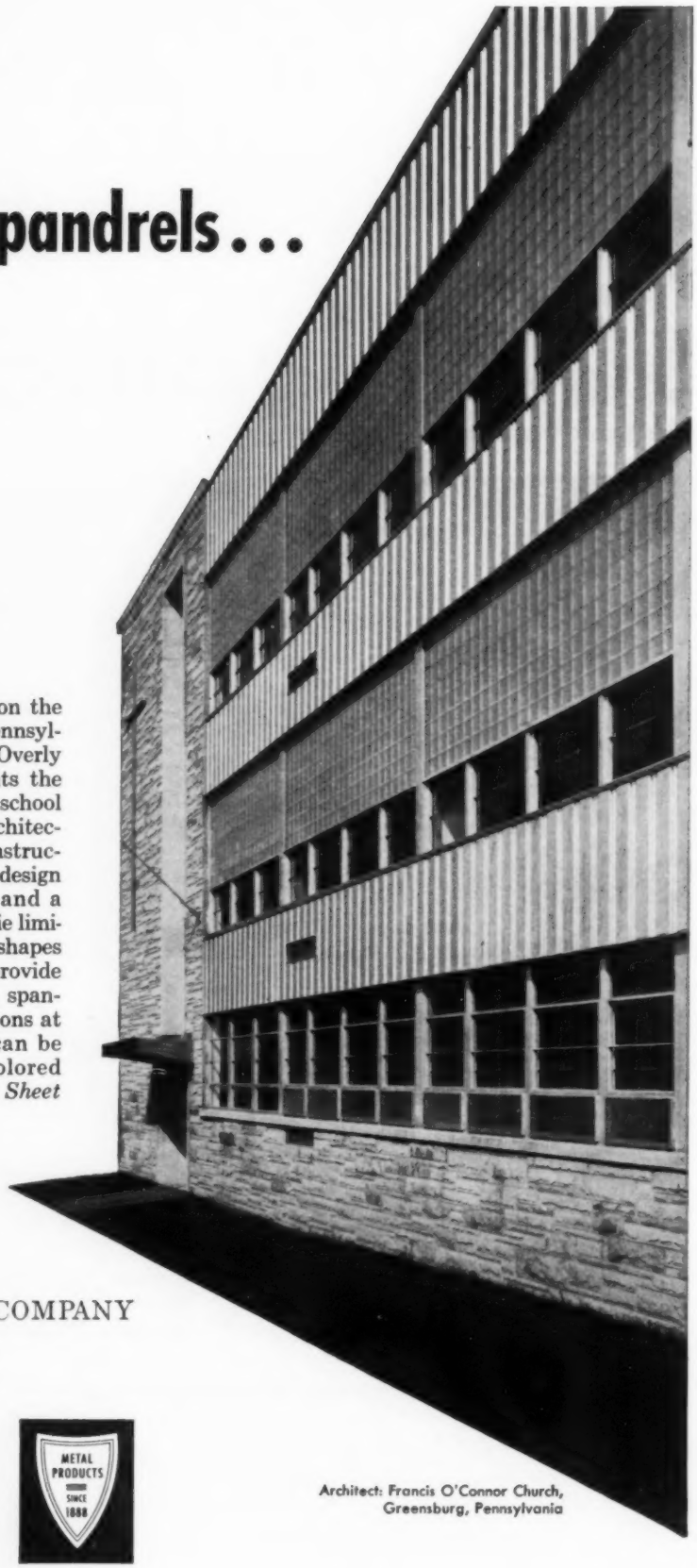
press-formed spandrels...

crafted by Overly

Press-formed aluminum spandrel work on the new Cathedral School, Greensburg, Pennsylvania, is another striking example of Overly imaginative design engineering. It points the way to better, more economical exterior school design through the use of permanent, architecturally effective metal insulating wall construction. • Overly's press-formed spandrel design has a distinctive wide rounded edge and a narrow pointed divider section. Within die limitations, an unlimited variety of designs, shapes or combinations may be developed to provide almost any desired effect. • The Overly spandrel design above, uses 9″ wide flat sections at a height of 4′6″. Further variations can be achieved with textured sheets and colored finishes. *Write us today for new Overly Sheet Metal Catalog 8b-Ov.*

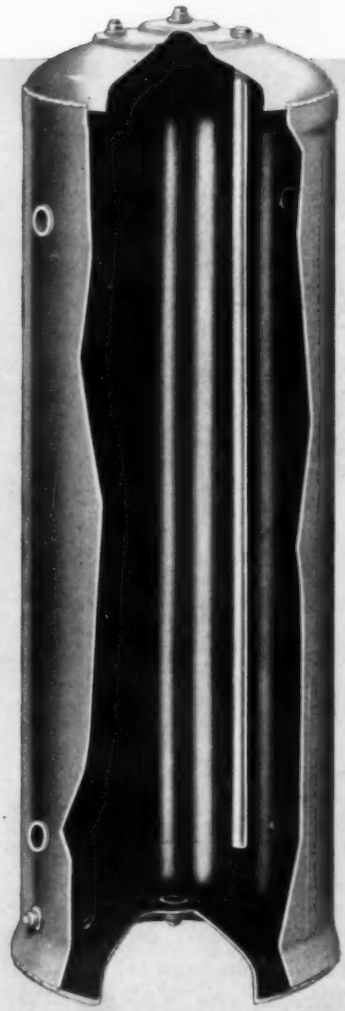


Architect: Francis O'Connor Church, Greensburg, Pennsylvania

OVERLY MANUFACTURING COMPANY
Greensburg, Pennsylvania
Los Angeles 39, California

METAL PRODUCTS SINCE 1888

now...a new 80 gallon



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WATER STORAGE TANK!

Here is a dependable, long-life, commercial water storage tank for medium size restaurants, large houses, small apartments and many other small commercial applications. And priced for hardly more than most galvanized tanks!

Just see what you get for your money—

- Glass-lined — completely corrosion-free . . . special A. O. Smith ceramic glass, permanently fused to steel . . . can't rust or corrode under any water conditions. Magnesium rods provide added protection against corrosive action. Hot water at any normally encountered high temperature may be safely stored.
- Compact—only 65½" high, 20" diameter.
- Fully guaranteed . . . 5-year warranty.
- Made by A. O. Smith . . . makers of the famous line of *Permaglas* water heaters with over 3,000,000 satisfied customers.
- Simple and easy to install.
- Handsome exterior . . . lightweight . . . sturdy . . . built throughout to stand hard commercial use.

For the clean, rust-free storage of hot or cold water, for small commercial applications, standardize on this new 80-gallon A. O. Smith *Permaglas* Tank.

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Tear out now and send in for FULL DETAILS

A. O. SMITH CORPORATION
Permaglas Division, Kankakee, Illinois, Dept ARCH R-456

Gentlemen: Please send me full data on the new 80-gallon *Permaglas* tank.

Name.....Title.....
Company.....
Address.....
City.....Zone....State.....

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FIRE AND
PANIC EXIT DEVICES

Tough!...Tested!...Trusted!

Von Duprin 8³
Vertical Rod
Device

● Here's the sort of treatment that Von Duprin exit devices absorb every day—year after year. And can they take it! Many of Von Duprin's devices have been in constant service for more than 40 years . . . with just normal maintenance. This durability, performance and precision design have teamed to make Von Duprin the preferred line of exit hardware. You can rely on Von Duprin to serve your daily traffic easily . . . and, most important, to be ready for that once-in-a-lifetime emergency. Von Duprin fire and panic exit devices—"the safe way out!"

VONNEGUT HARDWARE CO. • VON DUPRIN DIVISION • 402 WEST MARYLAND STREET, INDIANAPOLIS 9, INDIANA

Now... you can get STEEL ROOF DECK that's *Bonderized!*

Brand new addition to the list of architectural products made better by Bonderite*! Now you can specify steel roof deck with the protection of paint-anchoring, corrosion resistant Bonderite under the prime paint coat.

Bonderite, applied in one of the largest automatic systems in all industry, makes this famous manufacturer's roof deck a greater value than ever, without increasing your cost.

Bonderite, as you know from your experience with steel windows, metal panels, partitions, lighting fixtures and other painted metal equipment, does these three things: It anchors paint. It resists rust and corrosion. It preserves appearance.

For your own and your customer's satisfaction, specify Bonderized* roof deck.

**Reg. U.S. Pat. Off.*

PROTECTED IN SHIPMENT, STORAGE AND SERVICE

On guard all the way from plant to completed job! Bonderite protects the smooth, tight prime coat, prevents chipping, peeling, and spreading finish failure.

Since 1914— leader in the field

PARKER RUST PROOF COMPANY
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BONDERITE	BONDERITE and BONDERLUBE	PARCO COMPOUND	PARCO LUBRITE	TROPICAL
corrosion resistant paint base	aids in cold forming of metals	rust resistant	wear resistant for friction surfaces	heavy duty maintenance paints since 1883

Weatherproof, fireproof, maintenance-free. "Century" Corrugated Asbestos Sheets are used on the Operations Center of one of the southeastern utility companies. Engineering and supervision of construction: Stone and Webster Engineering Corporation. Applicator: Whatley Roofing and Sheet Metal Works, Tampa, Florida.

Never needs paint!
"Century"® Corrugated Asbestos Roofing and Siding

Specify "Century" Corrugated Asbestos-Cement Sheets. They're highly fire-resistant, made of asbestos fiber and portland cement—can't burn, rot, or corrode. They're strong, dense, tough. This roofing and siding material will withstand the ravages of weather year after year. Because "Century" Corrugated Asbestos Sheets rarely require maintenance, *never* need protective painting, expense is held to the barest minimum.

Easy to apply. These corrugated sheets offer big savings in application costs. They go on quickly, are easily sawed, drilled, and fitted on the job.

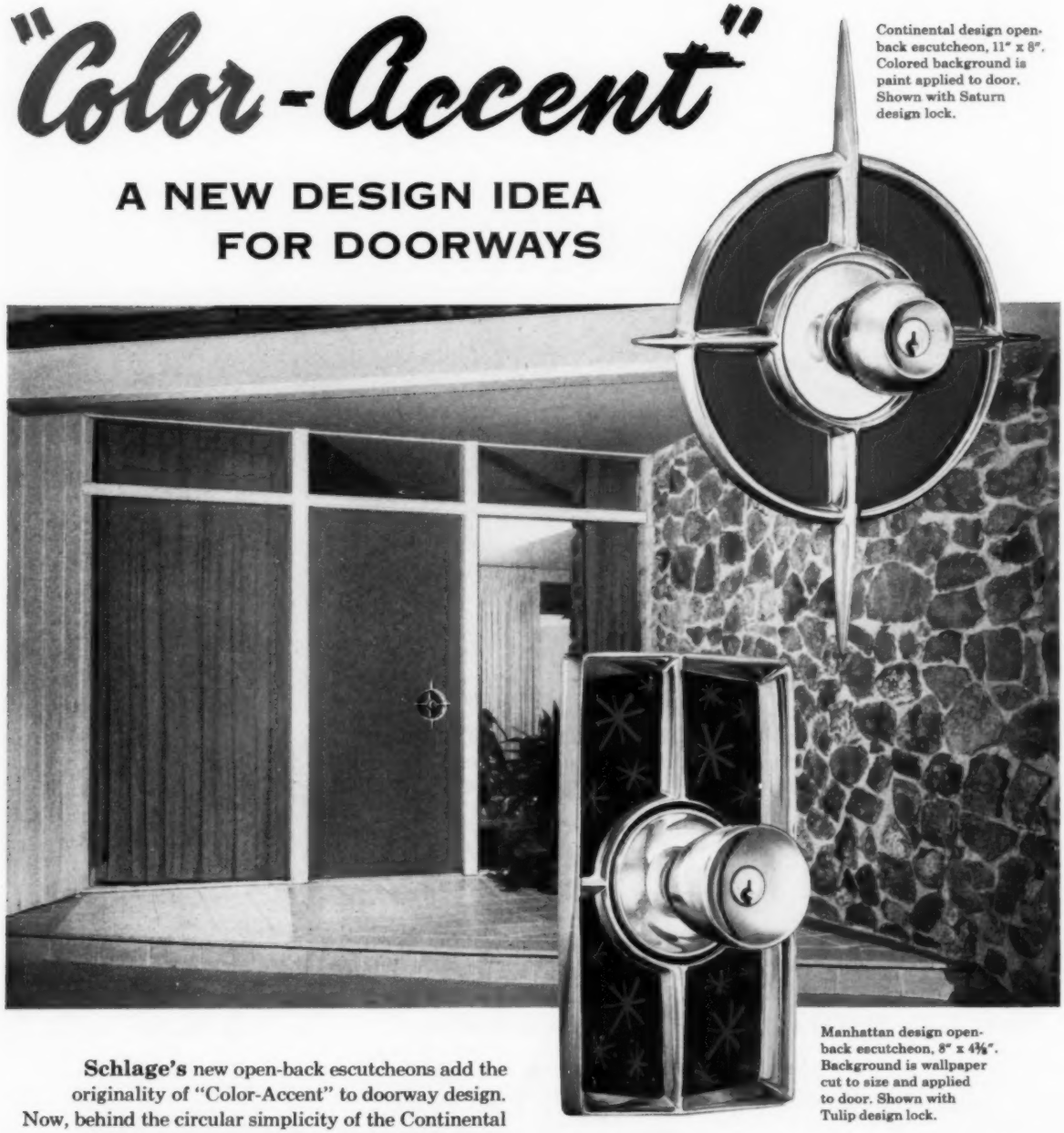
You'll find valuable data on "Century" Corrugated Asbestos Sheets in your *Sweet's Architectural File*. Write directly to us for additional details.

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

K&M best in asbestos®

"Color-Accent"

A NEW DESIGN IDEA FOR DOORWAYS



Continental design open-back escutcheon, 11" x 8". Colored background is paint applied to door. Shown with Saturn design lock.

Manhattan design open-back escutcheon, 8" x 4⅞". Background is wallpaper cut to size and applied to door. Shown with Tulip design lock.

Schlage's new open-back escutcheons add the originality of "Color-Accent" to doorway design. Now, behind the circular simplicity of the Continental or the rectangular symmetry of the Manhattan, an endless variety of colors and textures (wallpaper, grass cloth, pigskin, patterned metal) can be introduced to contrast with door surfaces, harmonize with adjoining walls, complement any part of the doorway or surrounding decorative treatments. Low in cost, yet rich in appearance, Schlage's "Color-Accent" escutcheons (available in brass, bronze, or aluminum) can be used with a wide assortment of Schlage lock designs. As original in concept as the Schlage cylindrical lock, the new open-back escutcheons bring to doors a "Color-Accent" as modern as today's color-filled homes.

Send for New "Lock Fashions" Brochure #651 - A-4 |
For colorfully illustrated applications of the new "Color-Accent" concept, attractive suggestions in doorway decoration, and complete information on Schlage residential lock and escutcheon designs, write today for this 4-color, 12-page brochure . . . or consult your local hardware supplier.

SCHLAGE

SCHLAGE LOCK COMPANY
SAN FRANCISCO • NEW YORK • VANCOUVER, B.C.
Address all correspondence to San Francisco

Many design possibilities are available with Flexachrome. Custom-made inserts, such as the Caduceus at the right, can do much to create special decorative effects.

For Tile-Tex's complete line of asphalt, greaseproof, and vinyl-asbestos floor tiles in color — see our catalog in SWEET'S Architectural and Light Construction Files.

Prescribe Cheerful Floors of Flexachrome

...a sure cure for drabness

Your clients will be glad to have Flexachrome in many areas in their hospitals, clinics and other similar buildings.

Colorful, l-o-n-g-wearing Flexachrome smiles back at hospital traffic in reception rooms, corridors, kitchens, patients' rooms, etc.

Here's why. This vinyl-asbestos floor tile is highly resistant to wear, greases, acids, alkalis, stains and scuffs.

It's a cinch to keep sanitary and clean. Waxing is not necessary unless a high gloss is desired. Flexachrome can pay for itself in maintenance savings alone, not to mention the added beauty and extra service.

Have your local Tile-Tex Contractor make an appointment to call on you with complete information on Flexachrome and the other Tile-Tex products listed below. You'll find his name in the classified telephone directory or by writing:

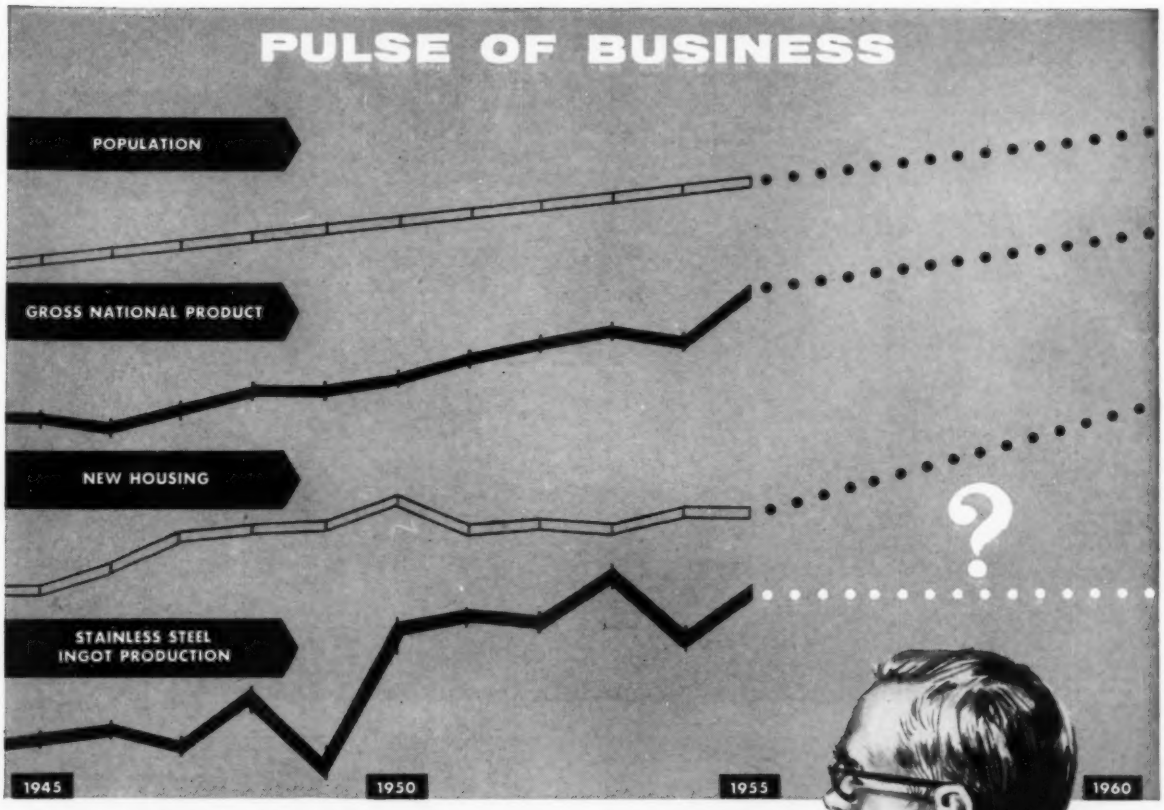
THE TILE-TEX DIVISION
THE FLINTKOTE COMPANY

1234 McKinley Avenue, Chicago Heights, Illinois.
In the 11 Western states: Pioneer Division, The Flintkote Company, P.O. Box 2218, Terminal Annex, Los Angeles, Calif.
In Canada: The Flintkote Company of Canada, Ltd., 30th St., Long Branch, Toronto.

*Reg. U.S. Pat. Off. † Trademark of The Flintkote Company

TILE-TEX ... *Floors of Lasting Beauty*

Manufacturers of Flexachrome*...Tile-Tex*...Tuff-Tex*...Vitachrome*... Holiday†...Mura-Tex*...and Modnar†, the "plank-shaped" asphalt tile in wood-tone colors.



Can you grow with your markets?

As the national economy continues to expand so also will your markets. For you to grow with these markets there must be a corresponding increase in your supply of raw material. Right now, as in the case of stainless steel, this presents a problem.

If stainless steel sheet plays an important part in the manufacture of your product, you are more than likely accustomed to specifying Type 302, 18-8 chrome nickel grade. Due to government stockpiling of critical and strategic nickel, this particular grade is not as readily available as before and no immediate increase in supply can be expected. How then, if you are to increase your participation in this growth, can you overcome your problem?

THERE IS A WAY—another grade of stainless, namely Type 430, *is* readily available. Since it is a straight chromium stainless, it is not affected by the nickel shortage. Type 430 is by no means new and untried as it has been used extensively in strip form by the automotive and other industries. Over 30% of all stainless made in this country is the non-nickel bearing Type 430 produced primarily as strip and not as sheet.

Beside availability, the substantial savings in base price between 430 and the 18-8 grade is also of significant importance in these days of high prices. The amount you are presently spending for your stainless steel supply will buy considerably more stainless in the 430 grade, particularly in our MicroRold sheets.

When applied properly in applications where extreme corrosion resistance is not a factor, Type 430 has all the desired qualities of beauty, strength, corrosion resistance, long life and low maintenance. The steel industry estimates that 50% of all stainless steel sheet applications could satisfactorily use Type 430 as an economical and practical material. If the product is cleaned regularly 430 stainless can be used in any application. Why don't you investigate the possibilities of Type 430 for *your* product?

Washington Steel
Corporation
4-R WOODLAND AVE., WASHINGTON, PA.

Send for your copy, "Care and Use of 430 Stainless"

ONE OF A SERIES OF IDEAS FOR YOUR FILES

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WITH CORRUGATED ASBESTONE

Gold Bond Corrugated Asbestone applied on this building by Asbestos Corrugated Construction Company, Somerville, N. J.

Gold Bond Corrugated Asbestone and translucent panels add practical beauty to new plant

Upper sidewalls of this paint plant are decorative *and* useful. Panels of Gold Bond CORRUGATED ASBESTONE "400" interspersed with plastic fenestration having a common corrugated design, blend together to accentuate the lights and shadows of the exterior design. This also provides light for the building interior. Rock-like CORRUGATED ASBESTONE stands up against corrosion and weather without ever requiring maintenance during the lifetime of the building. Its use with other building materials is limitless.

How many uses can you think of for fireproof Gold Bond CORRUGATED ASBESTONE? Whether it's in remodeling or new construction, commercial or industrial, ASBESTONE creates striking good looks and permanence—means added strength and lower maintenance. Write for full details on this versatile, good looking material. Address Dept. AR-46, National Gypsum Company, P. O. Box 5257-B, New Orleans 15, La.

Gold Bond Technical Bulletin No. 2032 and Gold Bond ASBESTONE Application Book give full specifications and uses of Gold Bond Corrugated Asbestone Products.

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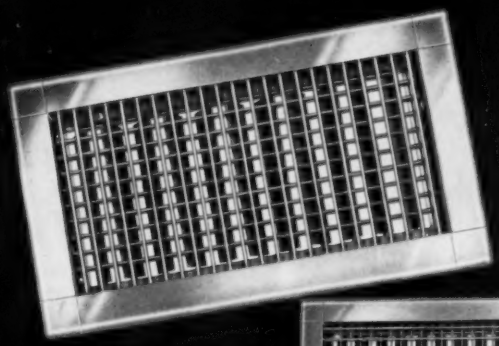
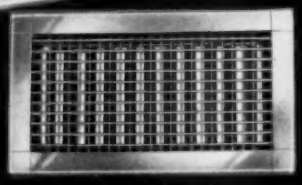
Build better with Gold Bond

LATH, PLASTER AND LIME | GYPSUM BOARD PRODUCTS | INSULATION BOARDS PLANKS AND TILES | ROCK WOOL INSULATION | PAINTS AND TEXTURES | ACOUSTICAL TILES | ASBESTOS ROOFING AND SIDING

. . . CORRUGATED ASBESTONE



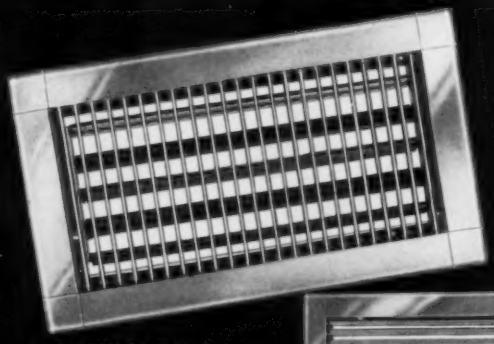
No. 92VHV — vertical front bars, horizontal second bank bars, vertical louvers.



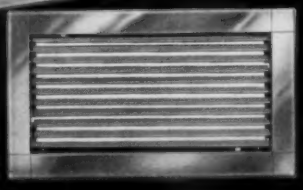
No. 92HVV — horizontal front bars, vertical second bank bars, vertical louvers.

MEMO:

For precise Heating and Cooling control, specify H&C registers and grilles in commercial installations.



No. 93V Register . . . vertical front bars set straight, horizontal louvers.



No. 94A Grille . . . horizontal face bars set at 22° angle for up or down deflection.

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H&C TRIPL-AIRE

. . . designed to provide any air-flow pattern you require. Here's the basic line that includes 260 possible combinations of capacity and deflection characteristics. Twenty-six standard sizes, up to 36" x 12" . . . each available in ten variations to provide almost any imaginable combination of deflections in both horizontal and vertical planes . . . plus all intermediate sizes up to 36" x 36" available on order. Face bars and louvers are both adjustable from the front of the register, and opposed louvers permit absolute volume control with equal air distribution over entire face. Finished in top quality enamel . . . modern "Decorator Grey" standard. Get complete details from your H & C Jobber, or consult our current catalog.

H&C FIXT-AIRE

. . . matching return air registers and grilles. Perfect companions to the TRIPL-AIRE line, these FIXT-AIRE units are matched in quality, design, and finish. Registers feature the same positive volume control with opposed louver construction, and have a single bank of face bars in fixed vertical or horizontal position. Grilles are available with horizontal face bars set at 22° angle for up or down deflection where desired. Maximum one-piece size: 36" x 30".

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(hydraulic check)

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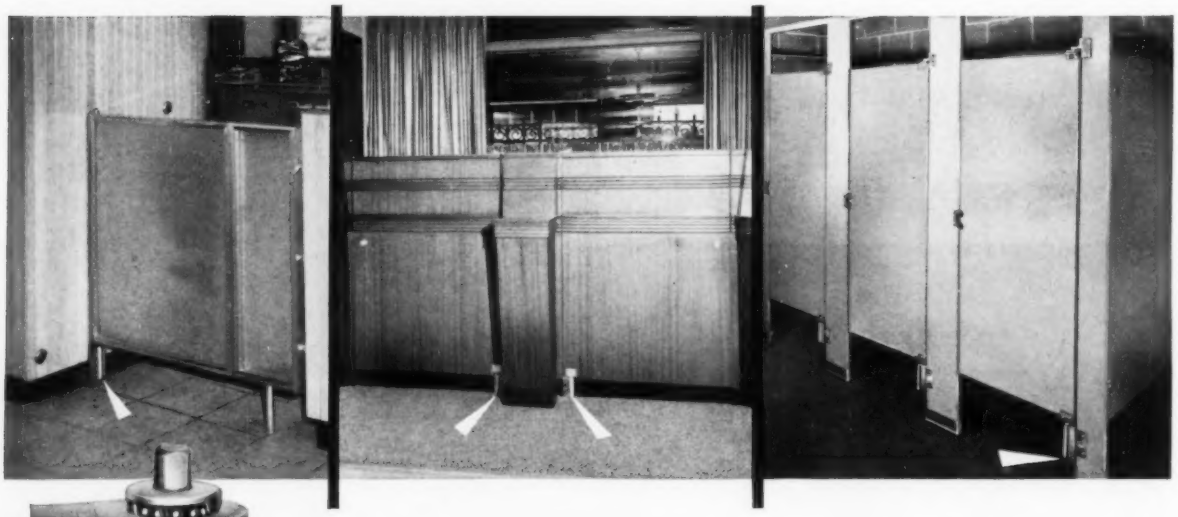
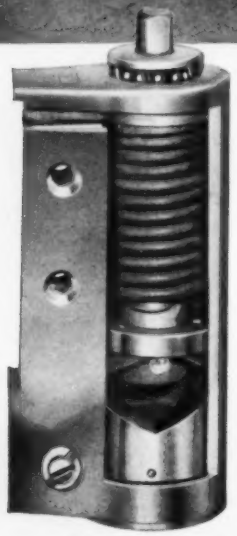
SILENTLY

bring office rail or half partition gates and lavatory stall doors to a *gentle close*





In keeping with the new design and sound quieting trends of the MODERN office or factory. No flip-flapping or slamming of office rail gates or lavatory stall doors when under the hydraulic control of RIXSON no. 350 series closers. Available for pivotal hanging or hinged doors . . . single or double acting . . . with over a dozen different attachment combinations to meet most any installation problem.

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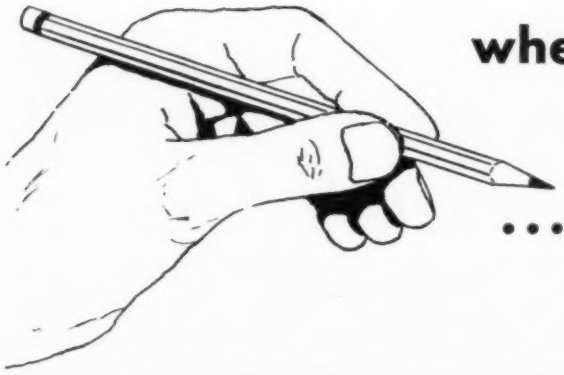

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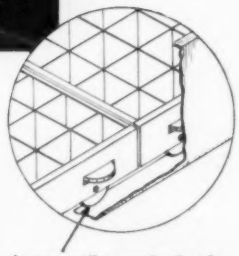

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Compact Planning characterizes unique school installation by *St. Charles*

WASHINGTON JUNIOR HIGH SCHOOL, NAPERVILLE, ILLINOIS SELECTS UNITS BY ST. CHARLES, CUSTOM-BUILT OF STEEL, FOR ITS NEW HOME ECONOMICS LABORATORIES

Home-unit kitchens, arranged in space-saving cluster, provide maximum convenience in minimum area.

Clothing construction units provide machine and work surfaces, on same level, for group instruction. Storage space in sewing center multiplied by full-height storage wall, incorporating tote tray, wardrobe, ironing board units and general storage.

Skilled planning was the key to St. Charles success in solving the problem presented by this school's needs. The demands made by continually increasing registration upon the modest area available for cooking and sewing classrooms required the careful application of St. Charles wealth of experience.

As a recognized leader in the practical planning and custom construction of home and institutional facilities, St. Charles was well equipped to meet these demands. Their suggested floor plan, permitting accommodation of maximum class groups, in uncluttered, homelike surroundings, is proving highly practical and wholly satisfactory in actual operation. We would appreciate an opportunity to advise with you on your problems in home economics equipment, from initial layout through final installation. Write for complete details.

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Send for your free copy of "Education for Living," a recently published study of St. Charles products and their application to the homemaking classroom. Write

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For the homemaking classroom • For the home kitchen

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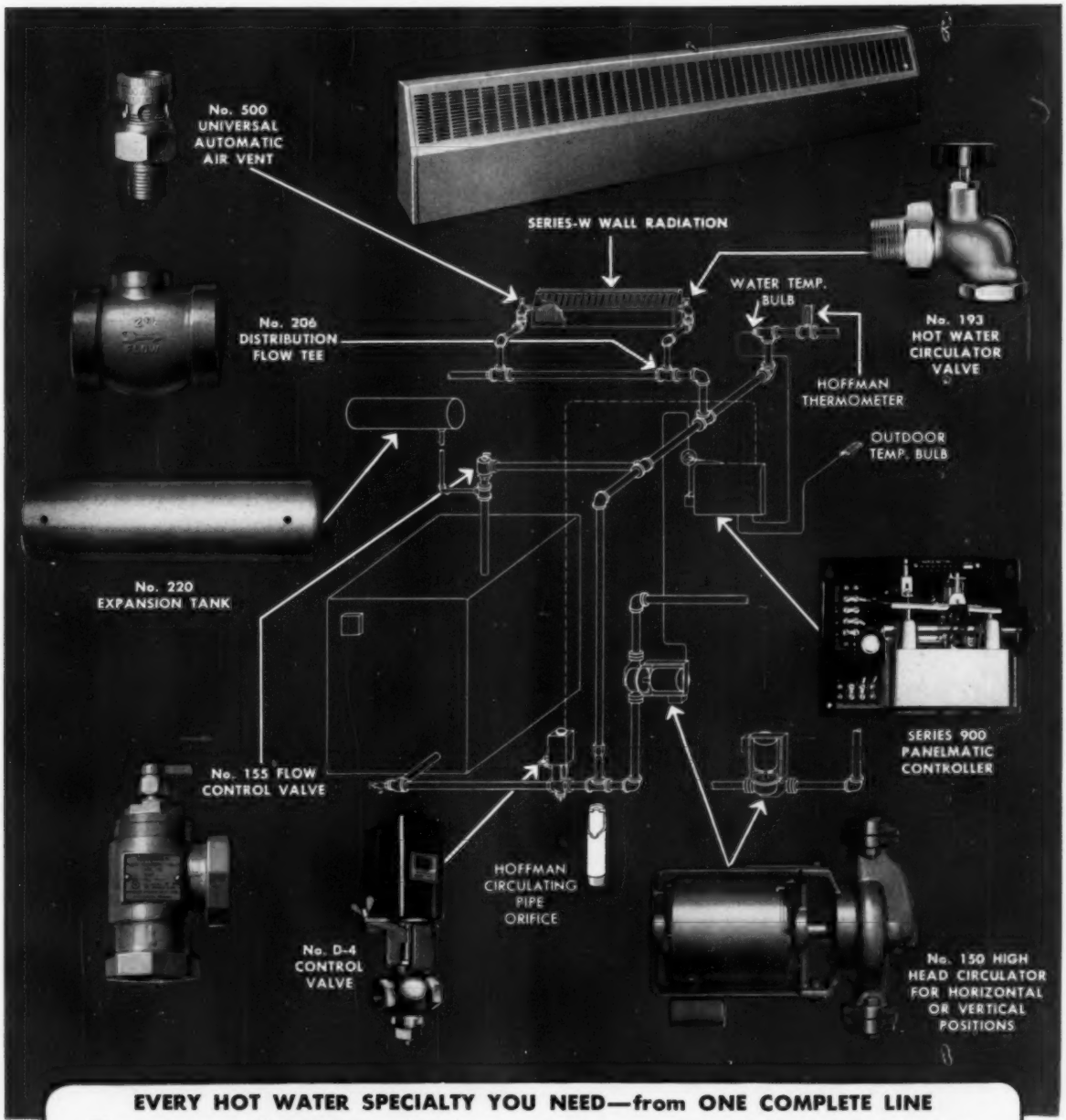
FOR HOT WATER HEATING SYSTEMS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Now you can specify Hoffman products for every spot on a hot water heating system—with three important advantages to you. First, you are assured uniform operating efficiency; second, it saves time from buying to billing; third, it provides one uniform guarantee from a single, recognized source. And, in addition, builders are quick to appreciate the sound Hoffman design features that cost no more than ordinary kinds. New Bulletins on High Head Circulators, Flow Control Valves, Expansion Tanks, Flow Tees, Circulator Valves and Wall Radiation are available, free, no obligation.

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Makers of Valves, Traps, Hot Water Heating Systems, Vacuum and Condensation Pumps . . . Sold by Leading Wholesalers of Heating and Plumbing Equipment

The terminal building addition at Buffalo Airport was designed by Thomas B. Bourne, Associates, Inc., architects and engineers, Washington, D. C. *General Contractor:* Frederick T. Williams Co., Inc., Buffalo.

BUFFALO AIRPORT EXPANDS FACILITIES TO HANDLE A MILLION PASSENGERS A YEAR

With more than 80 flights each day going in and out of Buffalo Airport, it became necessary to enlarge facilities, particularly at the main terminal building. With more than 1 million passengers a year using the facilities of the airport, the restaurant, waiting and baggage-handling space were no longer adequate.

Now a $1 million expansion program of the airport facilities gives Buffalo one of the most modern passenger terminals in the country.

A long, two-story addition to the main building, part of this program, has been completed. Besides providing larger working facilities, the new addition has a large waiting room and a particularly attractive dining room.

Both the floor and roof structures of the new addition to the Buffalo Airport were built with Bethlehem Open-Web Steel Joists. The steel joists provide a rigid, non-warping construction, and used in combination with concrete floor slabs and poured roof, give the new airport terminal building a fire-resistance of up to four hours.

Attractive dining room is part of the new addition.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

LAPIDOLITH HAS CASE-HARDENED FORD MOTOR'S CONCRETE FLOORS FOR OVER 40 YEARS!

Since their original order in 1915, Ford Motor Company has hardened millions of square feet of concrete floors with LAPIDOLITH

The powerful hardening action of Lapidolith makes concrete floors harder and more dense to prevent their crumbling and dusting under wearing action!

Only one inexpensive treatment is necessary, because liquid Lapidolith penetrates deeply into concrete to harden in *depth* as well as on the *surface*.

LAPIDOLITH—the concrete hardener backed by a bonded guarantee!

When floors are Lapidolized according to specifications, L. Sonneborn Sons, Inc. makes available a Bonded Guarantee (backed by the National Surety Corporation of New York)—assurance that concrete floors are hardened and will not dust or crumble under wearing action!

Architects, Builders, Contractors and Maintenance Engineers are urged to get the facts on Lapidolith. Write today for more information.

FORD'S NEW CENTRAL STAFF OFFICE BUILDING, Dearborn, Mich.

A Product of **Sonneborn** RESEARCH

Makers of Hydrocide Colorcoat
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MAIL COUPON FOR FURTHER INFORMATION

L. SONNEBORN SONS, INC.
Building Products Division Dept. AR-4
404 Fourth Ave., New York 16, N. Y.

Gentlemen:

We are interested in more information on the concrete hardening properties of Lapidolith.

Architect ☐ Builder ☐ Contractor ☐ Maintenance ☐ Dealer ☐

Name_____

Company_____

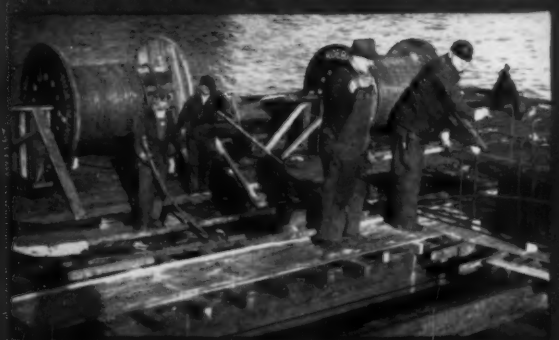
Location_____

City_____ **Zone**_____ **State**_____

ANOTHER PRESTRESSED CONCRETE PIER

for The Port of New York Authority

General view of pier deck nearing completion. Post-tensioned pile caps 21'-6" on centers are supported on steel H piles. Pier is 323 feet wide x 702 feet long.



Pulling 320-foot length of Roebling strand from barge-mounted reel into pile cap forms. Strand was delivered encased in flexible metal hose and with fittings attached ready for placement in forms.

Tensioning a strand while standing in railroad well. Use of single long-stroke center-hole ram and threaded connections cuts jacking time to minimum.

IT IS INTERESTING to recall that prestressed concrete was specified as an *alternate* to more conventional designs for Pier C. The results of that project were so satisfactory that prestressed concrete alone was specified for the new Pier A at Hoboken, N. J.

Roebling Tensioning Elements were used for pre-tensioning the deck stringers on both piers, and for post-tensioning the pile caps at Pier A. Several factors led to the choice of Roebling Strand Assemblies for the pile caps:

★ Machine fabricated strands permitted larger units and reduced the number of tensioning elements handled on the job;

★ For units exposed to tide action, Galvanized Strand Assemblies provided corrosion resistance while curing and minimized friction while tensioning.

★ 320-ft. assemblies complete with metal hose and fittings could be pulled into the forms (with stirrups in place) in 15 minutes;

★ Quick and easy tensioning with a standard center hole ram and threaded connections permitted supervision by regular personnel without need for specialists.

Precast stringers on the new pier, 5 ft. wide x 1 ft. deep and spanning between pile caps 21'—6" on centers, were pretensioned with over 400 miles of Roebling ⅜" 7-wire Uncoated Stress-Relieved Prestressed Concrete Strand.

Linear prestressing in America was initiated by Roebling. In fact, after two years of development and tests, Roebling assumed the role of "guinea pig" in 1946 and placed a prestressed concrete floor in its new Chicago warehouse.

Today, as the result of continuous development and participation in all types of prestressed projects, Roebling is the foremost supplier of tensioning materials in the industry. Why not ask the most dependable source for suggestions and advice on specific applications? Write Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, N. J.

Pier A was designed by Parsons, Brinckerhoff, Hall and Macdonald for The Port of New York Authority. Erection including stringer fabrication, by J. Rich Steers, Incorporated.

ROEBLING

Subsidiary of The Colorado Fuel and Iron Corporation CF&I

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MORGAN
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FLUSH DOOR
PATENT PENDING

The World's Finest!

PATENT PENDING
EXCLUSIVELY MORGAN

TEE-COR HOLLOW FLUSH DOOR
FOR *EITHER* INTERIOR OR EXTERIOR USE

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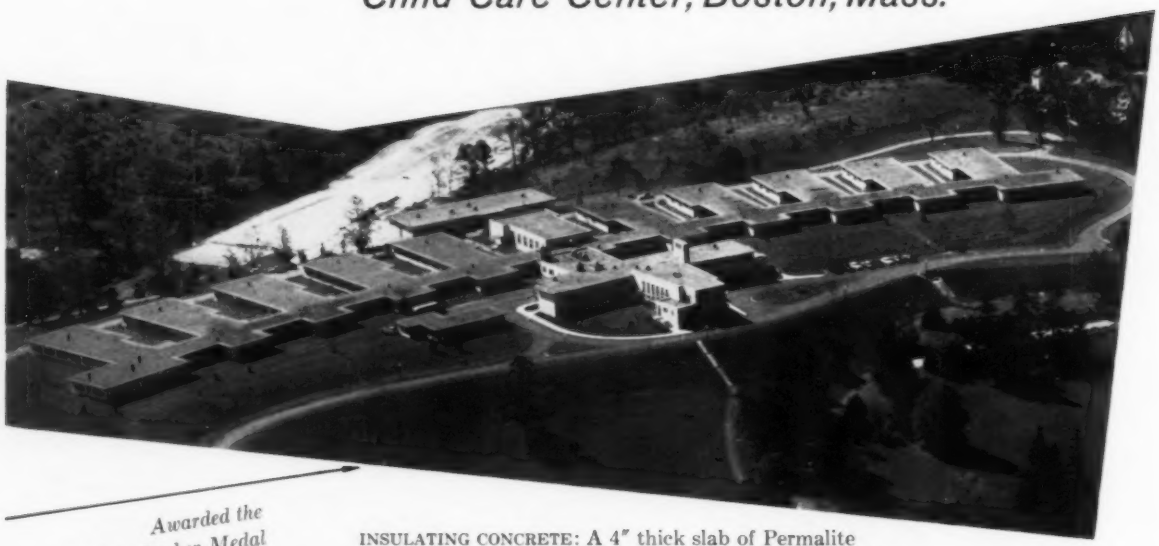
MORGAN *Company* · **Oshkosh, Wisconsin**

PERMALITE helped **3** *ways in building*

NAZARETH

Child Care Center, Boston, Mass.



Awarded the Harleston Parker Medal for outstanding design in the Greater Boston area

INSULATING CONCRETE: A 4" thick slab of Permalite insulating concrete (1:6 mix) underlies all of the 70,000 sq. ft. concrete slab on which the entire group of buildings rests, and prevents heat loss from the radiant heating coils in the slab.

INSULATING ROOF FILL: Permalite insulating roof fill in the chapel, convent, chaplains' quarters, kitchen, auditorium and gymnasium, clinic and school helps to keep these buildings warm in winter, cool in summer.

LIGHTWEIGHT PLASTER: Lightweight Permalite-aggregate plaster was used for the base coat in all the buildings because of its easier handling, better workability and added structural and insulating values.

Permalite®
THE LARGEST SELLING PERLITE AGGREGATE IN THE WORLD

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Building Contractor: Thomas O'Connor Co., Cambridge, Mass.
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Permalite Supplied by: The Whittemore Co., Roslindale, Mass.

Write for full information on the many uses of Permalite in modern construction

PERLITE DIVISION GREAT LAKES CARBON CORPORATION
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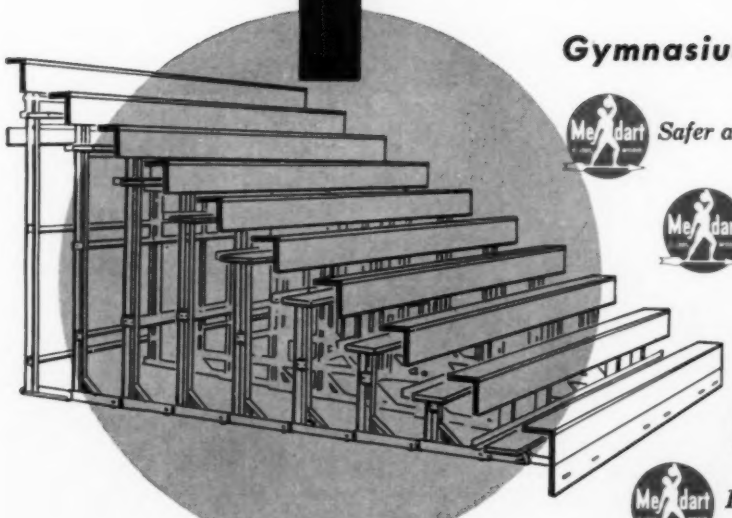
MEDART

TELESCOPIC GYM SEATS*



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- *Safer and stronger*
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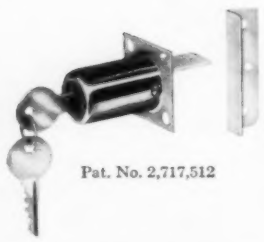
No. 1058 Lock



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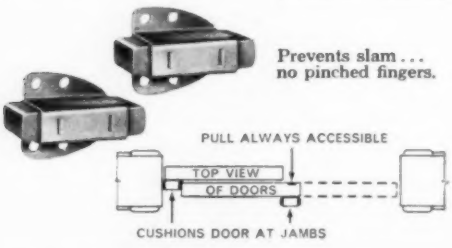
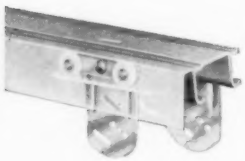
Tongue *raises* to lock by-passing doors . . . *lowers* to unlock. Exclusive new design. For ¾" to 1¾" doors.

No. 885 Door Cushions



Prevents slam . . . no pinched fingers.

600 Series



The Accepted Standard of Quality

Satin finish aluminum track with built-in apron. Adjustable hangers. Nylon wheels with oiled-for-life bronze bearings. Only 1" headroom required.

Sliding Door Pulls

New surface pulls need no mortising. Streamline appearance. No screws showing.

No. 863, 1½" long.
No. 865, 2½" long.
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New, Low Cost Hardware

Aluminum track. Large 1" Nylon wheels with oiled-for-life bronze bearings. Single wheel hangers for doors of average weight. Twin wheel hangers for doors of heavier weight.

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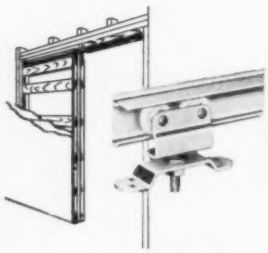

Warp-proof frame with steel header and jambs. Aluminum track. Adjustable hangers. Nylon wheels with oiled-for-life bronze bearings.

Send for our new 24-page catalog showing the most complete line of sliding door hardware and other builders' products or see our catalog in Sweet's Files.

"Every Sterling product is guaranteed to be good."

John Sterling
President

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This water closet does not disturb your peace of mind

The famous Case *time-tested Non-Overflow One-Piece* water closet with the whispering flush... produced in 32 decorator colors and sparkling black and white. Ask your* Case *wholesaler or write:*

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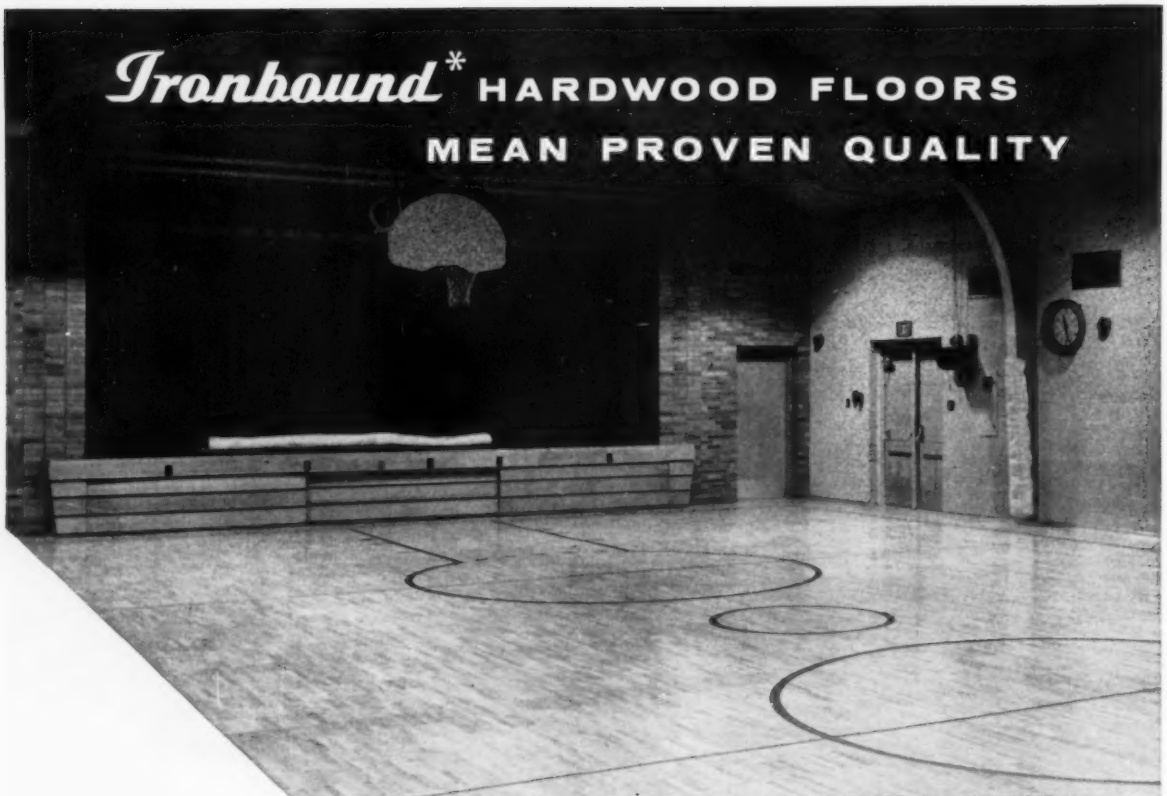
*Ironbound** HARDWOOD FLOORS
MEAN PROVEN QUALITY



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- **DENT RESISTANT**
- **LONGER WEARING**
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and more economical in the long run than any other type of floor. Installed only by topflight floor contractors who guarantee each floor — your assurance of quality.

Ironbound* Continuous Strip* Maple Floor in Multi-Purpose Room of Parkview Elementary School, Grand Rapids, Michigan.
Architect: J. & G. Daverman, Grand Rapids.

For multi-purpose rooms Ironbound floors are healthier because they are warmer, never clammy.

* T.M. Reg. U.S. Pat Off.

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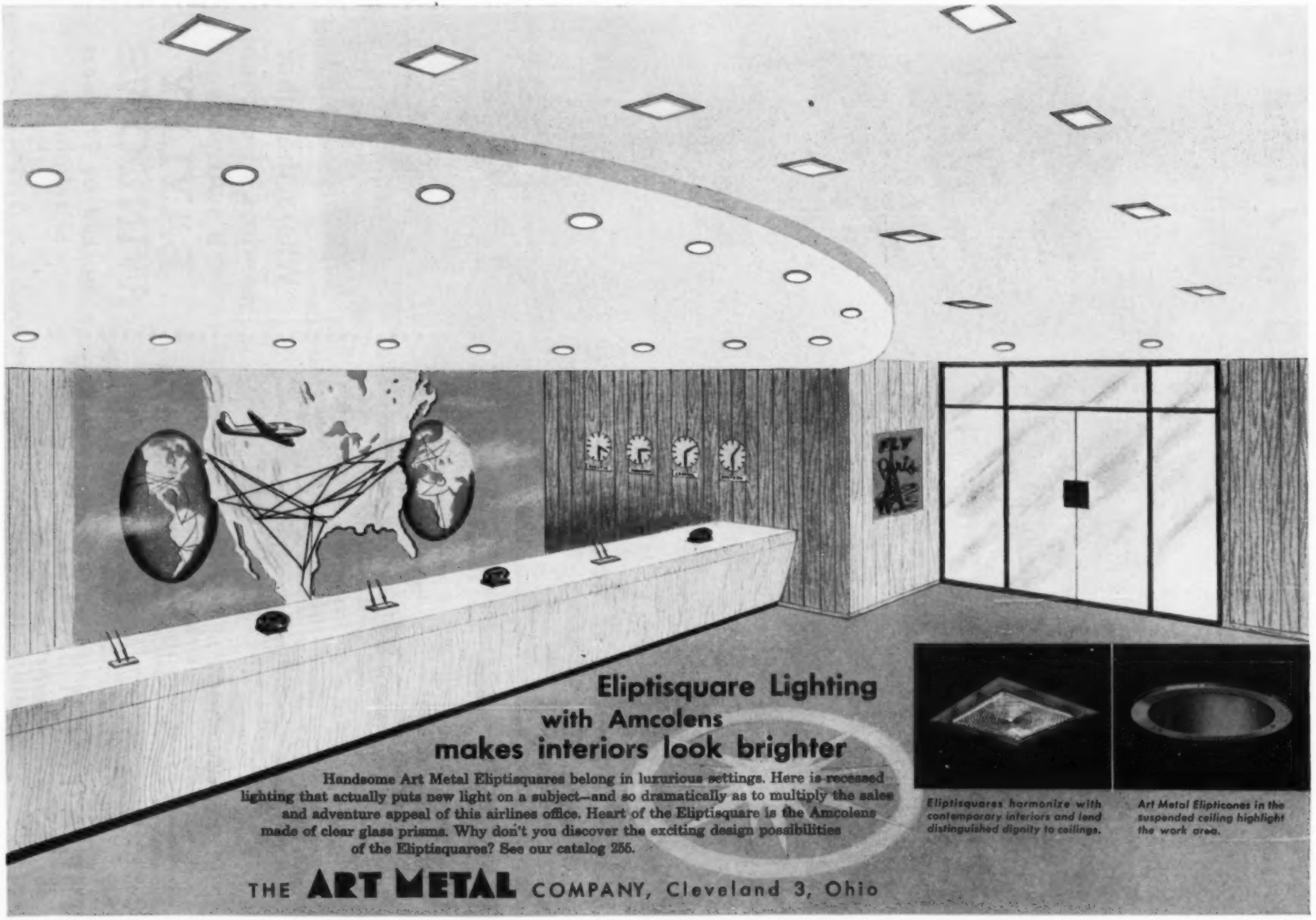
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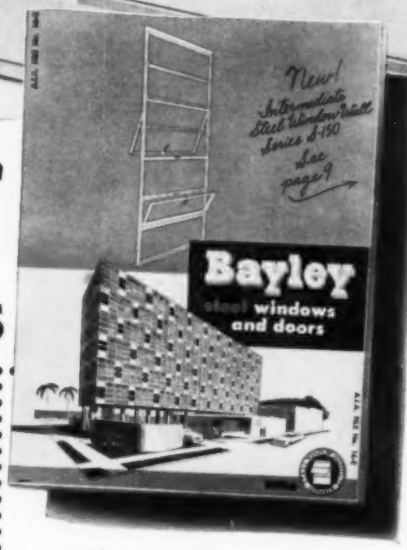

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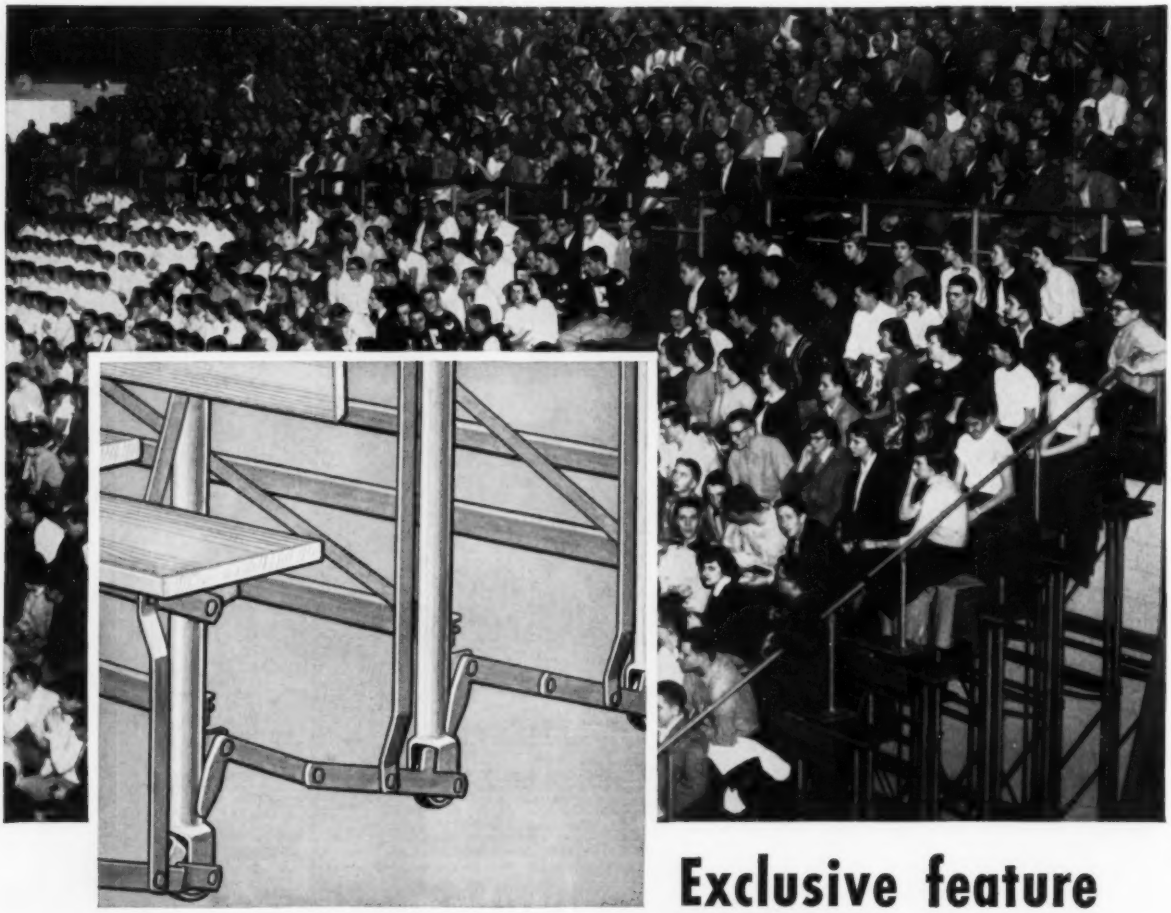

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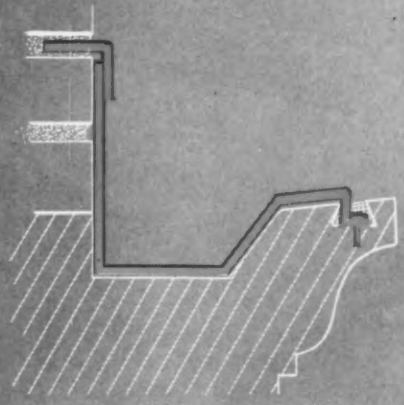
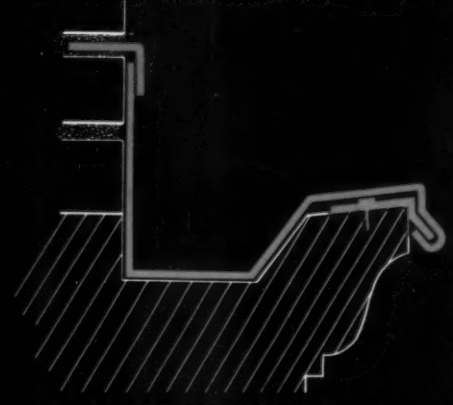


GUTTER LINING DETAIL
IN STONE CORNICE
Fig 1

. . . or this way?



GUTTER LINING DETAIL
IN STONE CORNICE
Fig 2

In Fig. 1 the detail illustrates a method of securing the outer edge of a gutter lining in a stone cornice and a masonry wall. The metal is turned down into a reglet in the stone and securely fastened with screws in lead shields.

In Fig. 2 the outer edge of the gutter lining is secured by being hooked over a previously placed edge strip. The edge strip is made from 8'-0" long pieces and secured to the stone by brass screws in lead shields. The edge strip is extended to form a drip as shown and the copper sheets used for the gutter hook over the edge strip to form a ¾" loose lock.

The method illustrated in Fig. 1 is most unsatisfactory. As all materials expand and contract, with the outer edge securely held, movement is restricted resulting in broken seams and the formation of buckles and pinches in the metal that lead to eventual failure.

When the outer edge is hooked over an edge strip as shown in Fig. 2, freedom of movement is provided.

If the proper gauge metal is used for the gutter lining, full movement is transferred to the expansion joint and buckles and pinches do not occur.

We do not wish to presume to tell you how to design your structures or dictate their construction. For there are many satisfactory methods of installing gutters, leaders, roofs, flashing, coping covers, etc., which, of necessity, change with the design and type of construction and materials used. The purpose of this advertisement is to point out the methods of installation that have been proved by many years of use, and backed by more than a century and a half of experience in working with copper, to be the most satisfactory techniques. You will find these methods in Revere's 110 page brochure, "COPPER AND COMMON SENSE." Send for a copy today. And remember: Revere has a staff of specialists known as Technical Advisors, whose experience qualifies them to render valuable service and advice regarding the use of metals in the building field. Feel free to consult with them at all times regarding the use of Revere Copper; you incur no obligation. Revere Technical Advisors may be contacted through the Revere Office nearest you.

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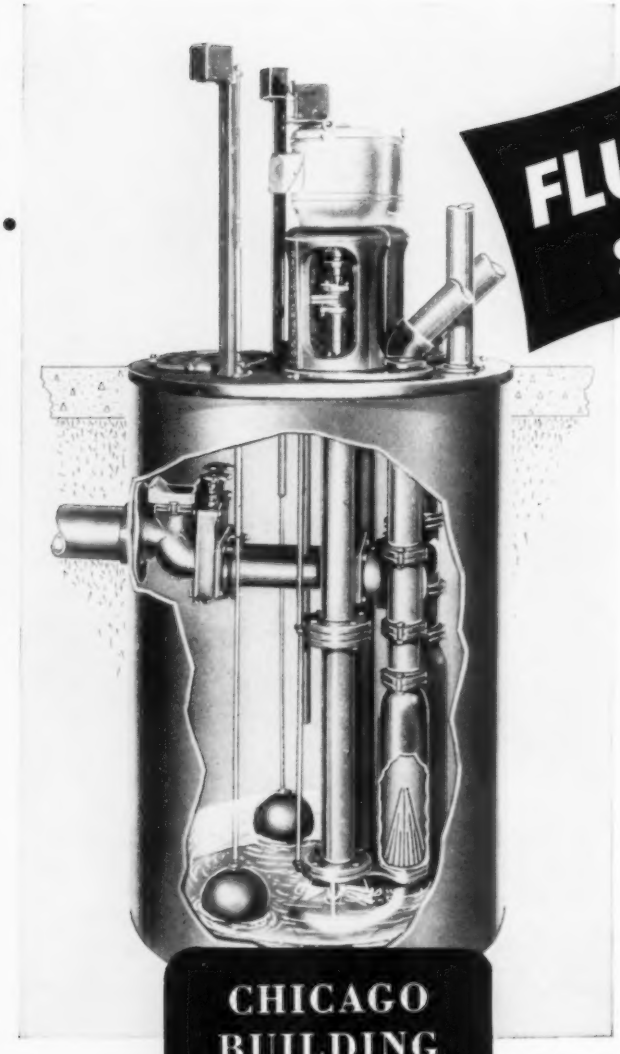

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CHICAGO BUILDING PUMPS

"Flush-Kleen" is the only true clog-proof sewage ejector. As proof, more than 12,000 have been installed and not one has ever clogged! That's because the impeller handles liquids, only. All coarse matter is strained out, then back-washed from the strainer into the higher level sewer. All other air or liquid ejectors have working parts in contact with coarse material. That's what causes clogging.

"Flush-Kleen" ejectors are usually installed in duplex units that operate alternately. While one pump operates, sewage flows into the wet basin through the idle pump. A strainer ahead of the impeller retains all coarse matter. (See cutaway) When the idle pump starts, the coarse sewage matter in the strainer chamber is flushed into the discharge pipe with liquid sewage. A special check valve prevents discharge back into the inlet line.

Engineering data showing how to determine sewage ejector capacities for any type or size of building are available. Write to Dept. E for your copy, today. Illustrated: The Type "F" submerged "Flush-Kleen" sewage ejector.

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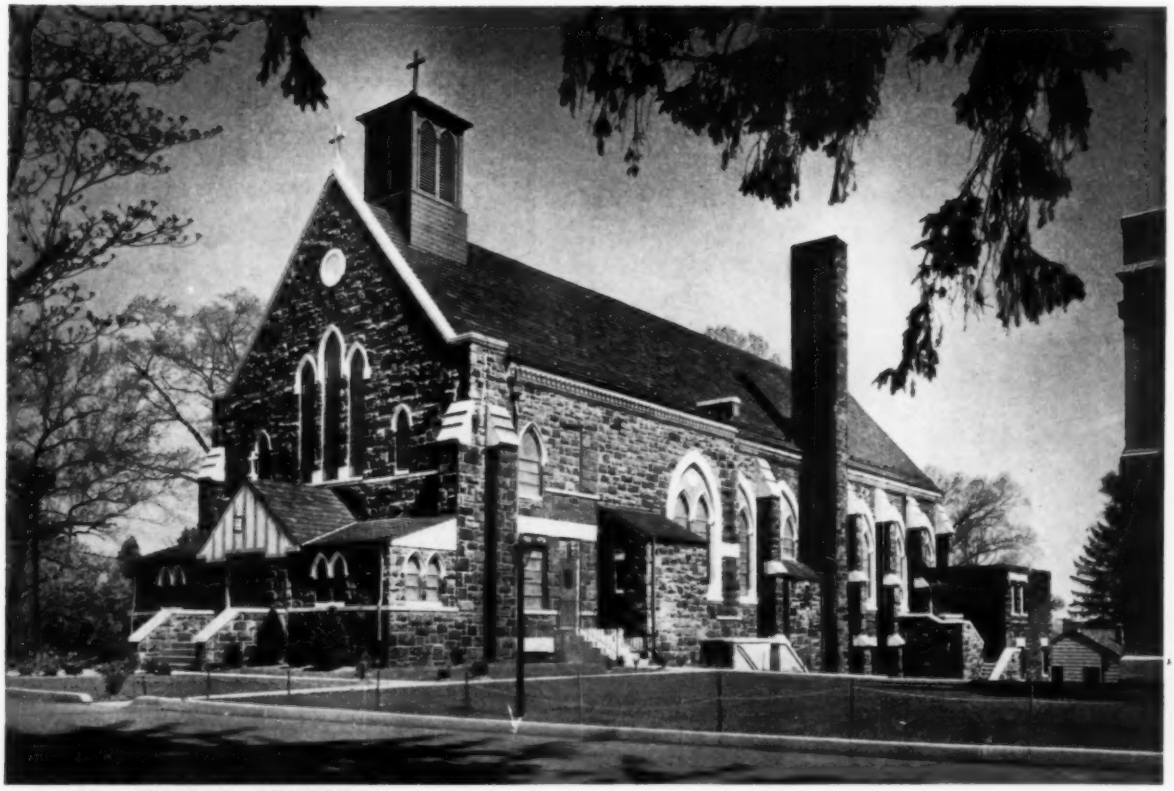

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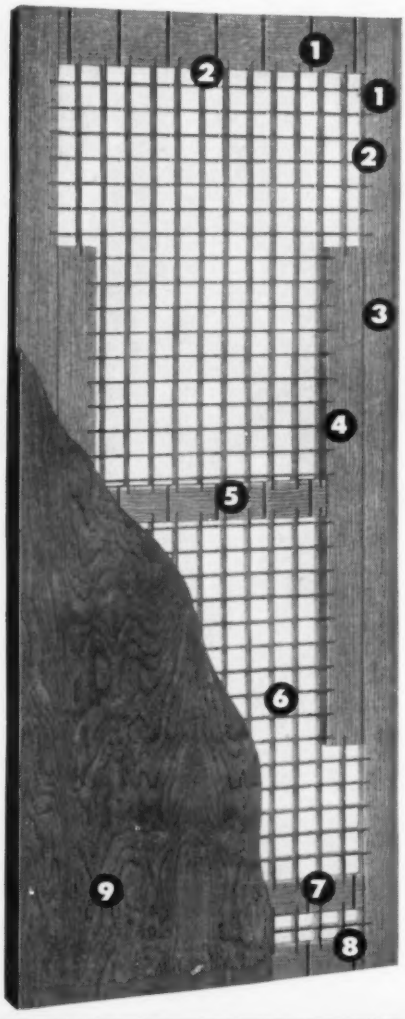
INSTITUTIONAL DOORS
with air-vented, all-wood grid core



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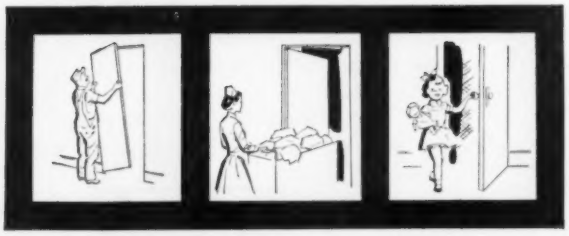

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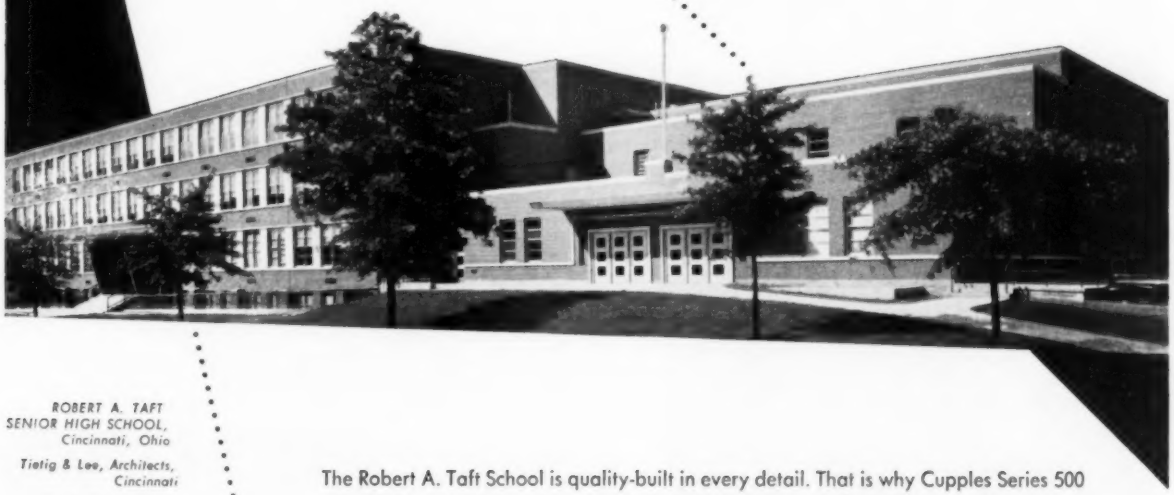

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Yet erected for less cost . . .

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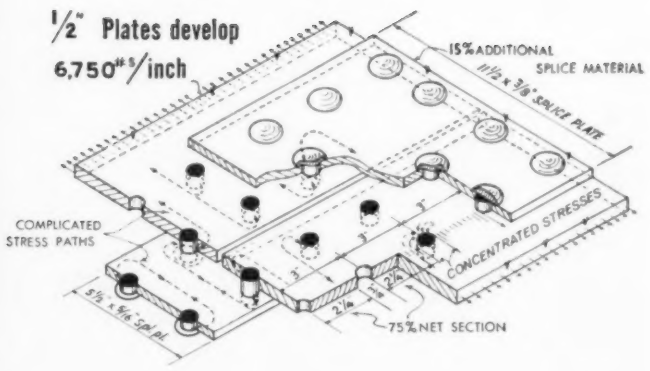
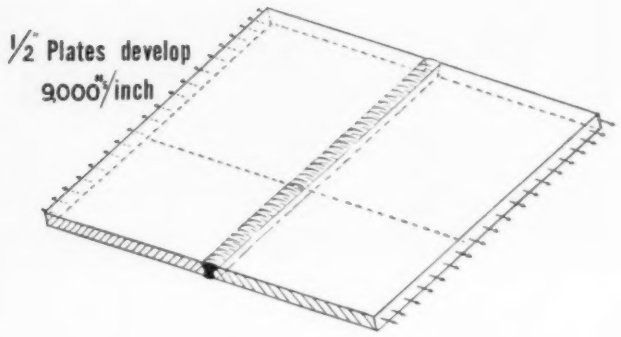


TYPICAL RIVETED JOINT— *Requires punching, splice plates and rivets*



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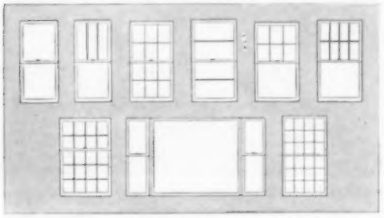
The George Wythe House, Williamsburg, Va., built in 1755 is one of the perfect examples of Georgian Colonial architecture. Its design is credited to Richard Taliaferro, Wythe's father-in-law.

Double Hung Wood Windows Still Grace the 201-Year-Old George Wythe Home

Relative inexpensiveness permits generous use of double hung wood windows with metal weatherstripping, even in the most modern homes.



An endless variety of design can be achieved with double hung wood windows. They are easily shaped and their surface receives and holds any type of finish.

That's a long time . . . but the Wythe house was built to *last*. Here, during Revolutionary days, Washington and LaFayette planned the Yorktown campaign; and here Wythe, known as the first professor of law in America, tutored Thomas Jefferson.

Notice how the double hung wood windows add to the beauty of this historic home. Air entered at breathing level and expelled at ceiling level through upper sash. When closed, these wood windows acted as natural insulators, keeping the Wythe home cool in summer . . . warm in winter. They *never* rusted or corroded.

Double hung wood windows have been improved, of course. The old type pulley—cord—weight system has been replaced by a modern spring sash balance. Glass area has been increased. Most important, metal weatherstripping keeps the windows weather-tight as there are no cracks or crevices between sash and frame. Rain, dust and cold are kept where they belong—outdoors! And double hung wood windows are ideal for installation of air-conditioners, room coolers, and window fans.

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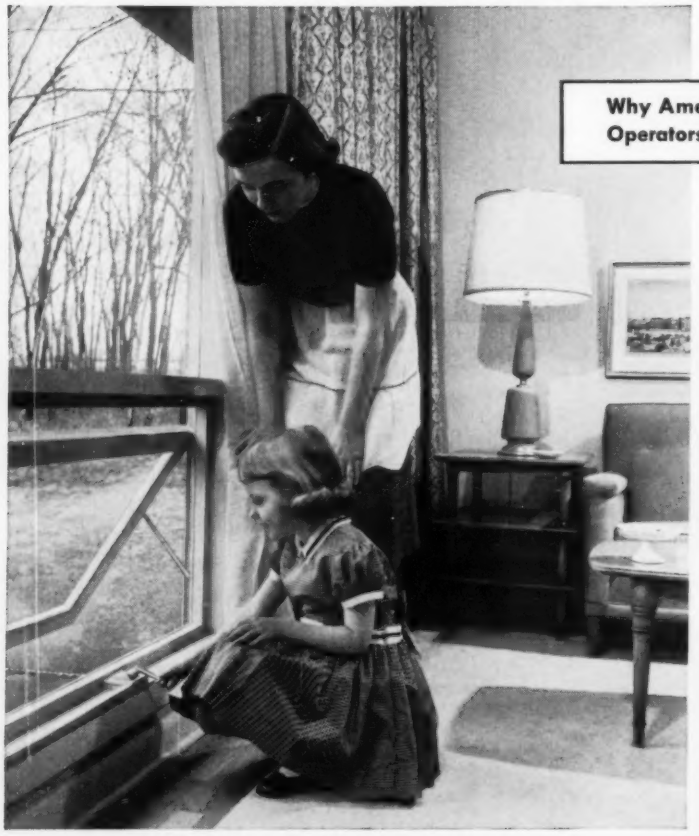
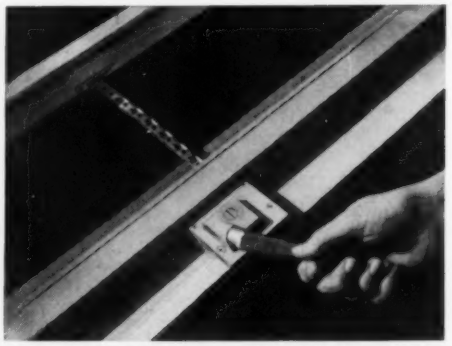
Why American Houses Inc. Chooses Getty Operators for Popular Awning Windows



This Getty set is easy to operate—easy to install. That's a particularly important consideration in prefabricated homes.

Architects' drawing of the Americana. House was designed in cooperation with *LIVING for Young Homemakers.*

The Getty hinges drop the sash 4½ to 6 in. from the head member so that outside of sash can be cleaned from inside the room. Only Getty hinges should be used with this operator.



The special Getty chain becomes fully rigid when extended —locks the window in any desired position.

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American Houses Inc. of New York is one of the world's largest and most successful manufacturers of prefabricated homes. In its new House of Vision model—the Americana—this company is using only the best building materials, accessories and equipment—including new Getty Chain Operator and Hinge Sets for the three to five awning windows in living room and den.

Getty Operators were chosen, states American Houses, because of their ease of installation, rugged construction, and good design, plus the Getty reputation for quality.

The Getty No. 4711 Set operates awning windows without disturbing the screen—locks sash securely in any open position—closes it tightly and locks it shut.

The operator itself works on a new and completely different principle. Of the angle-drive, worm-and-gear type, it engages a special flex-design chain which becomes rigid when extended in opening the window. Hinges drop the sash from the head member so that the outside of sash can be cleaned from inside the room. Operating with a brass shoe in a track, they slide smoothly and will not chatter.

The Getty No. 4711 Set comes in three sizes to fit windows from 14 to 30 in. high and up to 48 in. wide. You will find that its simplified and improved construction makes other operators completely out of date.

Hardware consultants, hardware wholesalers, hardware dealers, and retail lumber dealers can give you information on Getty Builders' Hardware. Call them or write Getty direct—now.

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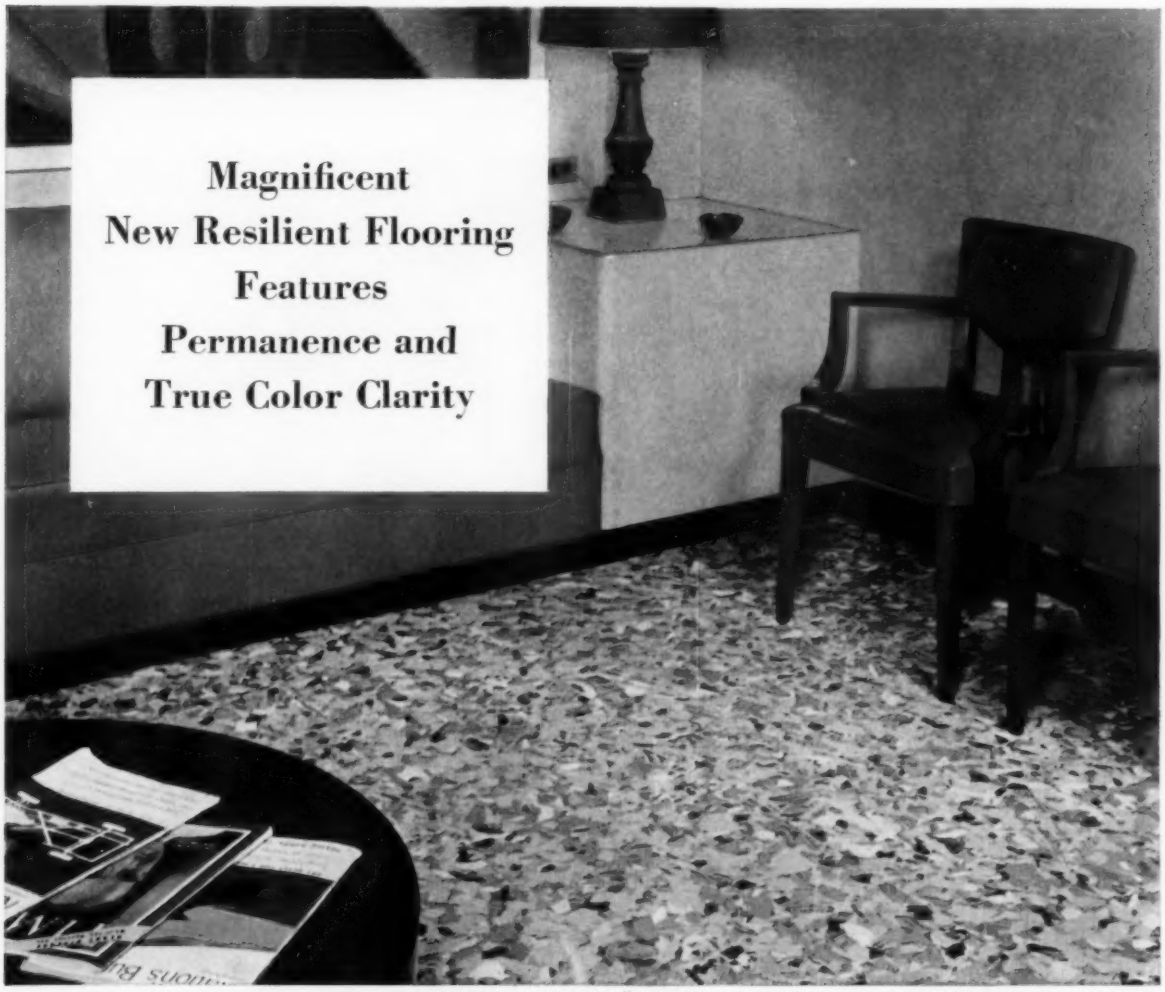

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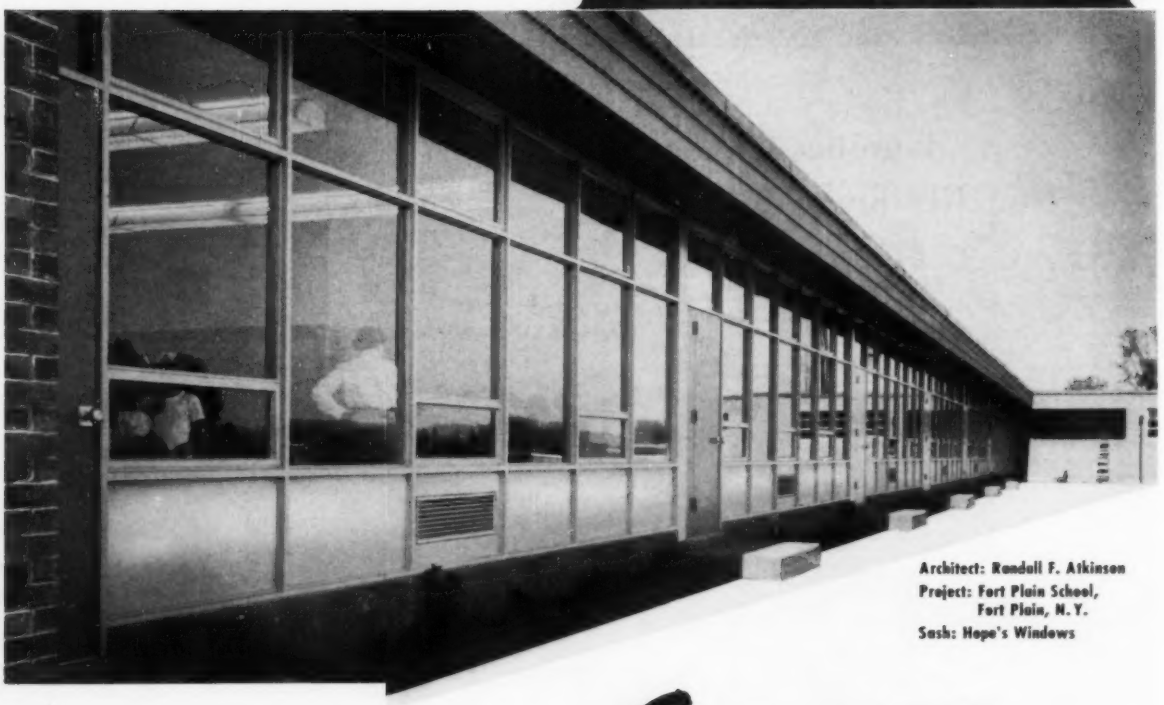
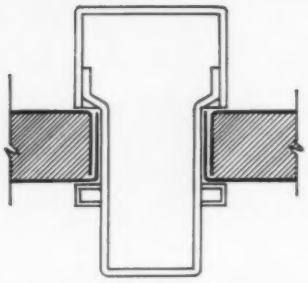
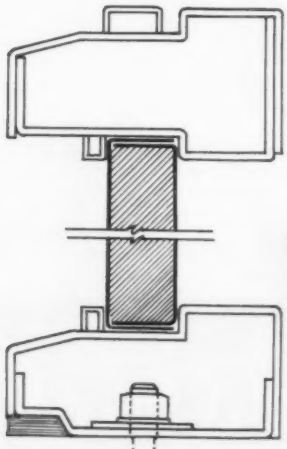
PANEL CONSTRUCTION DETAILS



Architect: Randall F. Atkinson
Project: Fort Plain School, Fort Plain, N. Y.
Sash: Hope's Windows





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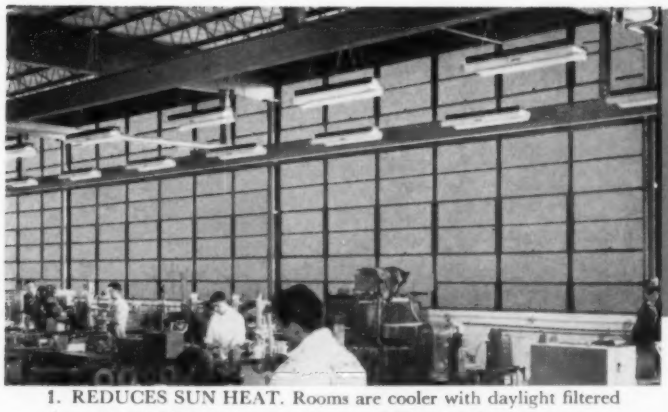
Window Design Freedom



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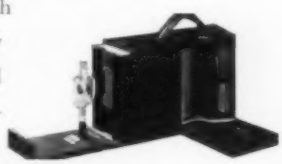

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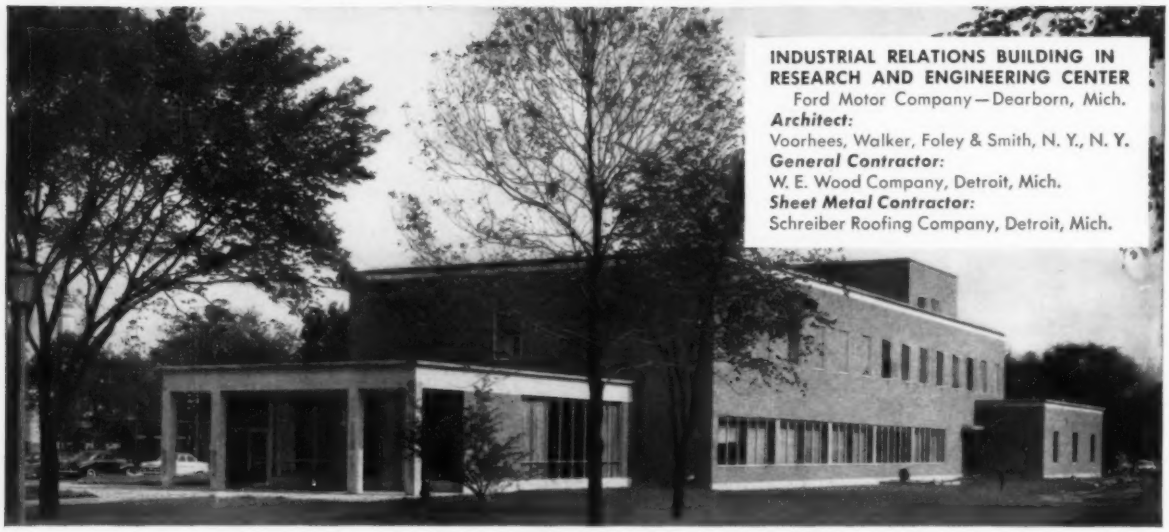

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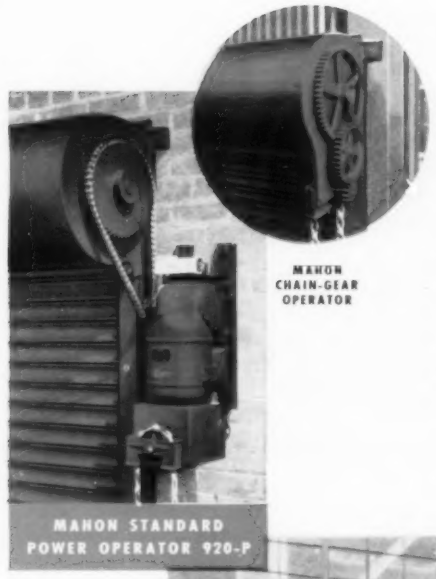
	St. Louis	San Francisco	Seattle	Waterbury	

Rolling Steel Doors

Manually, Mechanically, or Electrically Operated



MAHON CHAIN-GEAR OPERATOR

MAHON STANDARD POWER OPERATOR 920-P

In the combination truck and railroad opening illustrated below, two Mahon power operated rolling steel doors, with a movable mullion between, solved the problem of an extremely wide opening in which the entire width was required only occasionally for passage of railroad cars. The railroad spur track entered the building at an acute angle which necessitated an opening 36'-9½" wide for required clearance. It was also necessary to have a truck opening 14'-0" wide at the same location—hence the two doors. The 14 ft. door at the left operates normally as an individual door in general service as a truck opening. When it is necessary to use the entire railroad opening, both doors are opened and the movable mullion is unlocked and moved clear to the right on an overhead track. Rolling Steel Doors make ideal closure walls for craneway openings . . . they make economical, space-saving roll-up dividing walls for school gymnasiums . . . they provide an ideal means of controlling ventilation when installed in exterior walls of steel mills, foundries, pumping stations, and booster stations. When you have a special problem, consult Mahon engineers. When you buy a rolling steel door, check specifications carefully . . . you will find many quality and design features in Mahon Rolling Steel Doors that add up to a greater over-all value. See Sweet's Files for complete information including Specifications, or write for Catalog G-56.

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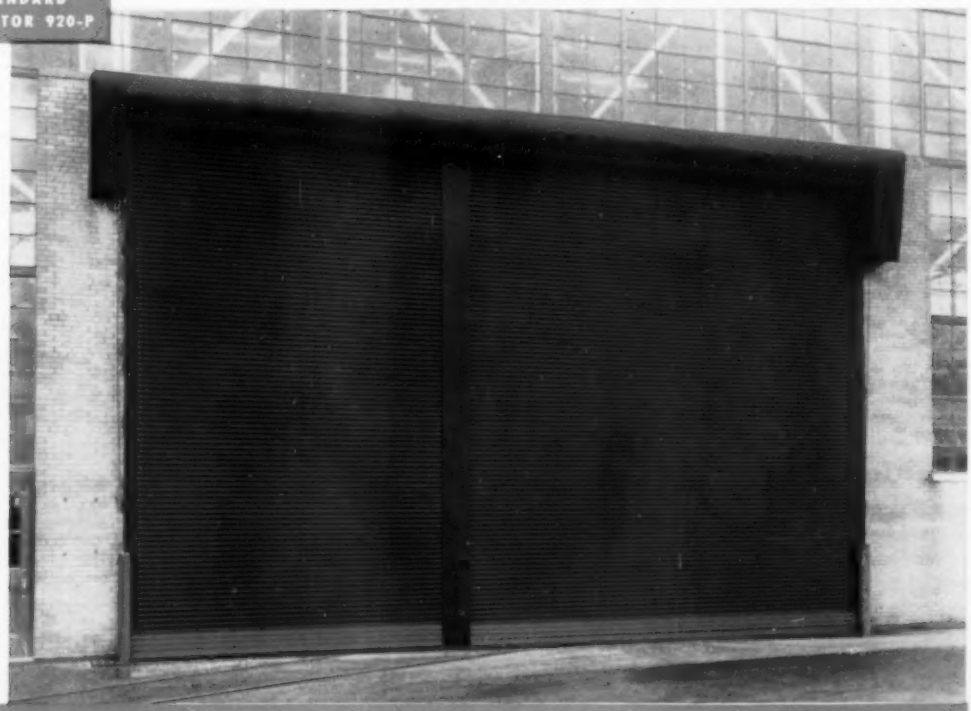

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Two Mahon Power Operated Rolling Steel Doors, with movable mullion between, installed in a combination truck/railroad opening 36'-9½" x 23'-0" in a new building for the Fitzsimmons Manufacturing Co., Detroit, Mich. Barton-Malow Co., Detroit, Mich., Gen. Contrs.

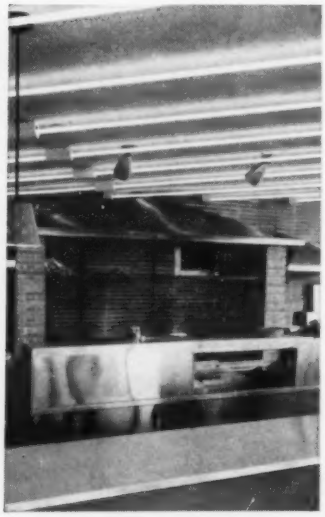
MAHON

"difficult" acoustical problems solved

says Martin Guttman, New Jersey Architect

"ZONOLITE® ACOUSTICAL"

makes big difference in Sound-Conditioning, Fire Safety and Beauty!



This is "The Nassau" new atmospheric restaurant honoring Princeton University. The tough "curb" ceiling—something you don't see very often—went on beautifully, says Architect Guttman. He's highly pleased that he selected Zonolite Acoustical Plastic for this difficult sound-conditioning job.

Avoid the tireless repetition of patterned ceilings and achieve sound-conditioning plus 100% fire safety with Zonolite Acoustical Plastic.

ANOTHER PLUS: Zonolite is being machine applied in buildings coast to coast, speeding jobs to completion sooner... saving time, labor, money.

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Please send your new booklet PA-29 describing cost-cutting uses of Zonolite Acoustical Plastic and illustrating actual current applications.

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Corrosion is costing the United States over five billion dollars a year, according to figures recently released. Companies today are taking a hard look at rust prevention costs. They are finding that Hot-Dip Galvanizing is the best solution to their problems. They know that items like chain-link fence, roofing, gutters, window sash, and many others will last longer if Hot-Dip Galvanized after fabrication. Over a period of years maintenance costs are kept to a minimum.

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Send today for our new booklet "Stop Rust." It gives you the full story on the process, plus a comprehensive coating comparison chart. "Must It Rust" 16 mm film available for showing.

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for metlwal

movable partitions

says E. A. Hamilton

Architect: William D. Reed, Dallas, Texas

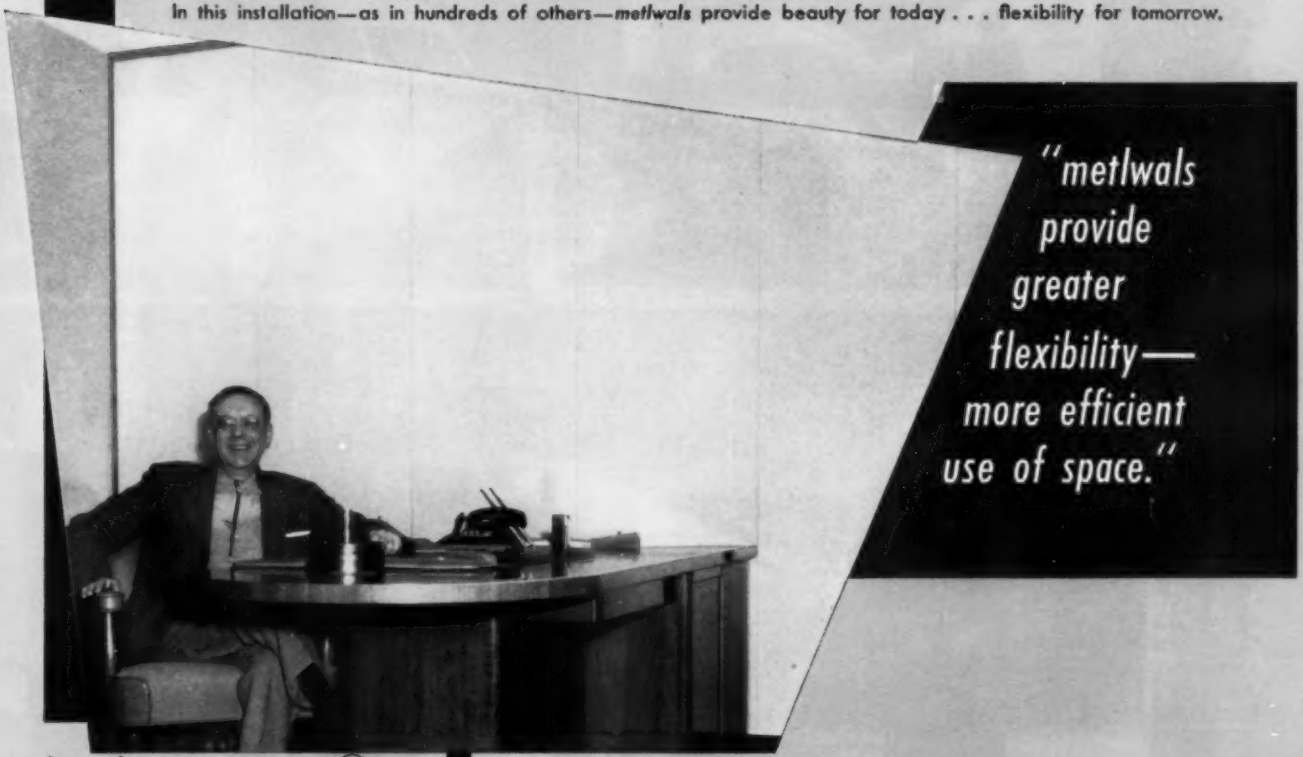
Building Manager of this modern new structure built by

FIRST NATIONAL BANK OF ARIZONA

After inspecting various types of partitions, a committee headed by Mr. E. A. Hamilton selected *metlwal* unanimously! According to Mr. Hamilton, ". . . *metlwal* movable partitions provide greater flexibility and make it possible to offer tenants functional offices that are custom designed."

"Even though our building is new," says Mr. Hamilton, "the movability of *metlwal* partitions, with full reuse and no waste, has already been demonstrated by changes and expansion of offices. This reduces the partition stock that we must carry, and will produce considerable savings through the years."

In this installation—as in hundreds of others—*metlwals* provide beauty for today . . . flexibility for tomorrow.



"metlwals provide greater flexibility—more efficient use of space."

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ASSURANCE OF EXTRA QUIET AND PRIVACY

Complete test results on sound transmission loss — made by an independent research organization — are available to you. They prove the advantages of metlwal's double-wall, double-insulated construction. Write for your copy.

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fabricates panels of Alcoa® Aluminum

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Handsome appearance, speed of erection, low cost and freedom from maintenance make the Margold Building unusually interesting to architects and builders. The Margold Building neatly reconciles two divergent objectives: the architect's goal of distinctive beauty . . . the owner's additional demand for low construction and maintenance costs. Alcoa Aluminum was the reconciling factor. It costs less . . . installs for less . . . provides a distinctive appearance with virtually no maintenance.

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If you are considering a new building, aluminum curtain wall construction could be a deciding factor. The architectural specialist in your nearby Alcoa sales office can help you . . . or write a letter to Aluminum Company of America, 1888-D Alcoa Building, Pittsburgh 19, Pennsylvania.

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Always Fasten Aluminum with Alcoa Aluminum Fasteners

This aluminum door being assembled from Alcoa Sheet and Extruded Shapes in the A. F. Jorss shop is typical of that company's custom work in ornamental aluminum.

Handsome dark gray appearance and clean, simple design characterize the Margold Building at 11th and F Streets, N. W., Washington, D. C.

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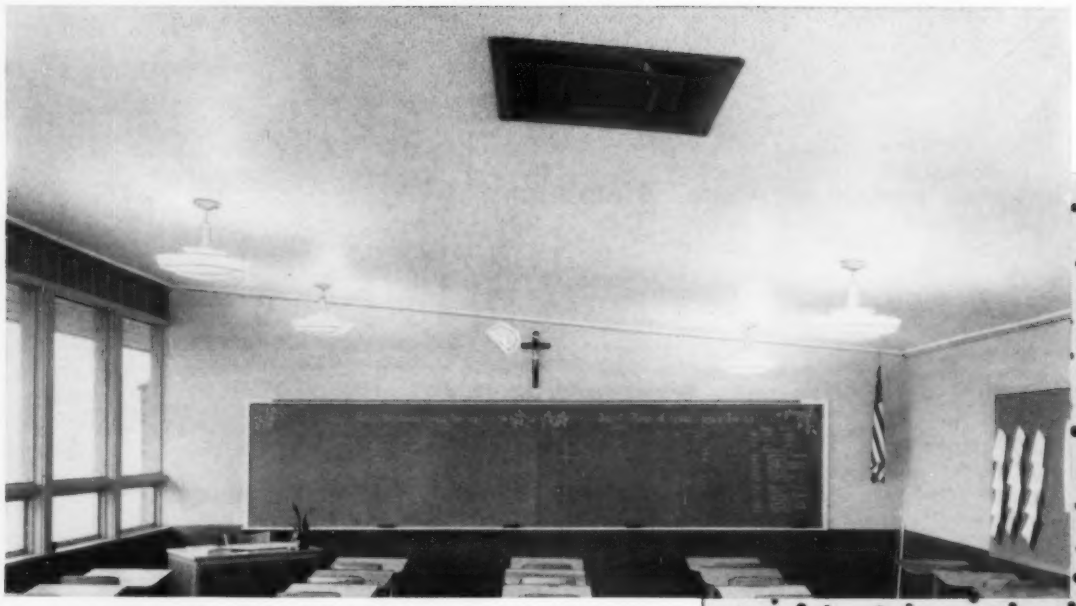
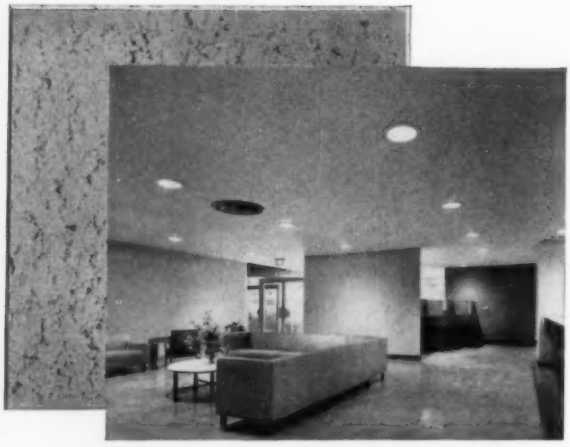


Economical sound conditioning of large areas is doubly important in a budget-built school. The Full Random Cushiontone ceiling in this classroom adds quiet, beauty, and easy maintenance for little more than the cost of a plaster ceiling.
. . . St. Phillip the Apostle Church and School, Clifton, New Jersey

ECONOMY . . . How much should efficient sound conditioning cost?



Moderate in cost, the Travertone ceiling in this hospital lobby will provide many years of excellent service. This investment in quiet pays off in extra fire-safety, smart beauty, and economical maintenance.
. . . The Mason Clinic, Seattle, Washington

The price of sound conditioning is not based on its effectiveness alone, but rather on a combination of special product features, such as appearance, incombustibility, or moisture resistance. While sound conditioning can cost from $.25 to $1.00 per sq. ft. installed, even the most inexpensive acoustical material will do an excellent noise-muffling job under average conditions.

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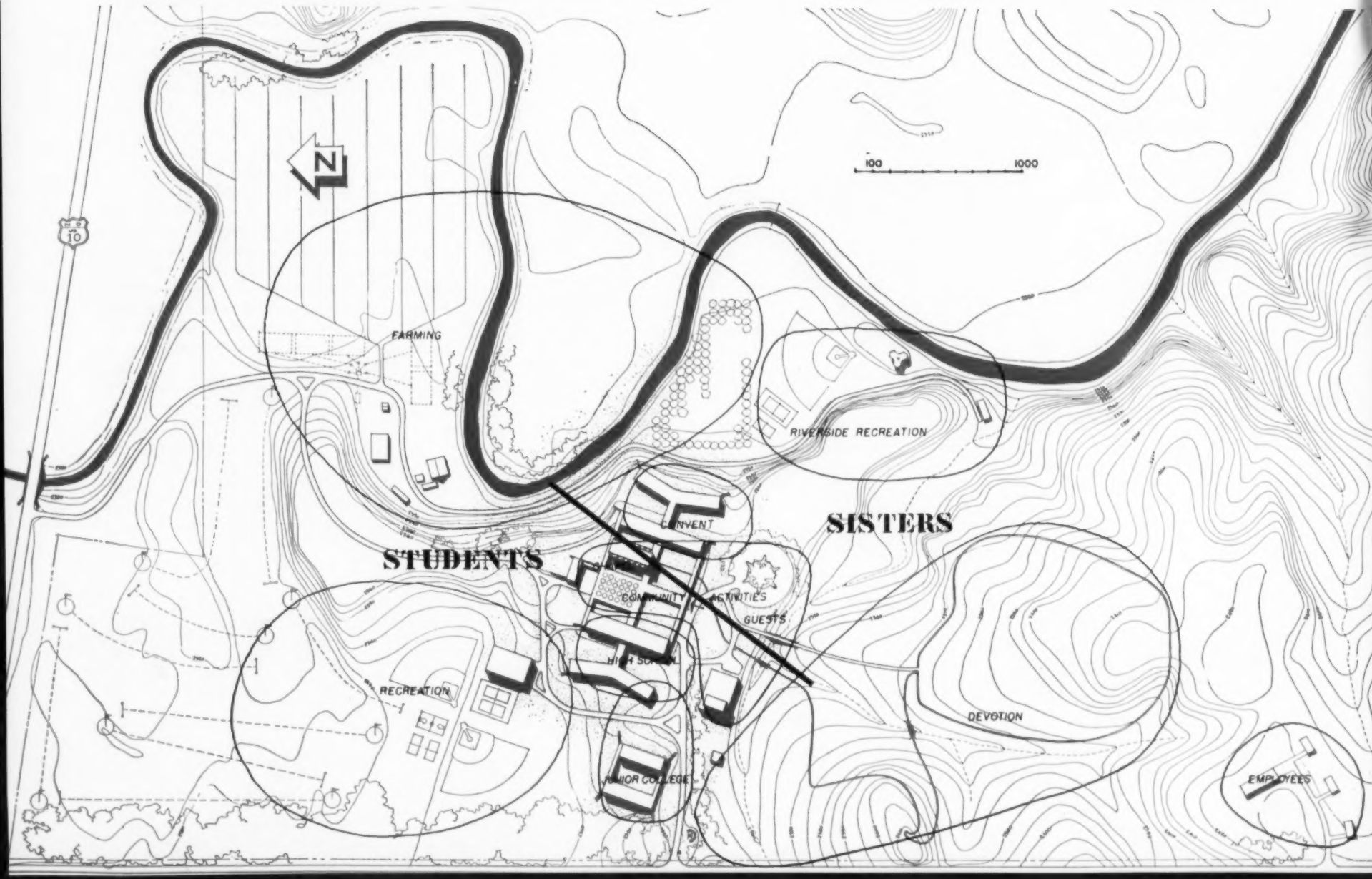
BREUER DESIGNS A CONVENT



CONVENT OF THE ANNUNCIATION *Dickenson, North Dakota*

Marcel Breuer, Architect

Traynor & Hermanson, Associate Architects

Slocum & Fuller, Consulting Engineers

LAST MONTH architect Marcel Breuer and his associate Hamilton Smith sat down with RECORD editors John Knox Shear and James Hornbeck to discuss the design for this convent. Their conversation follows:

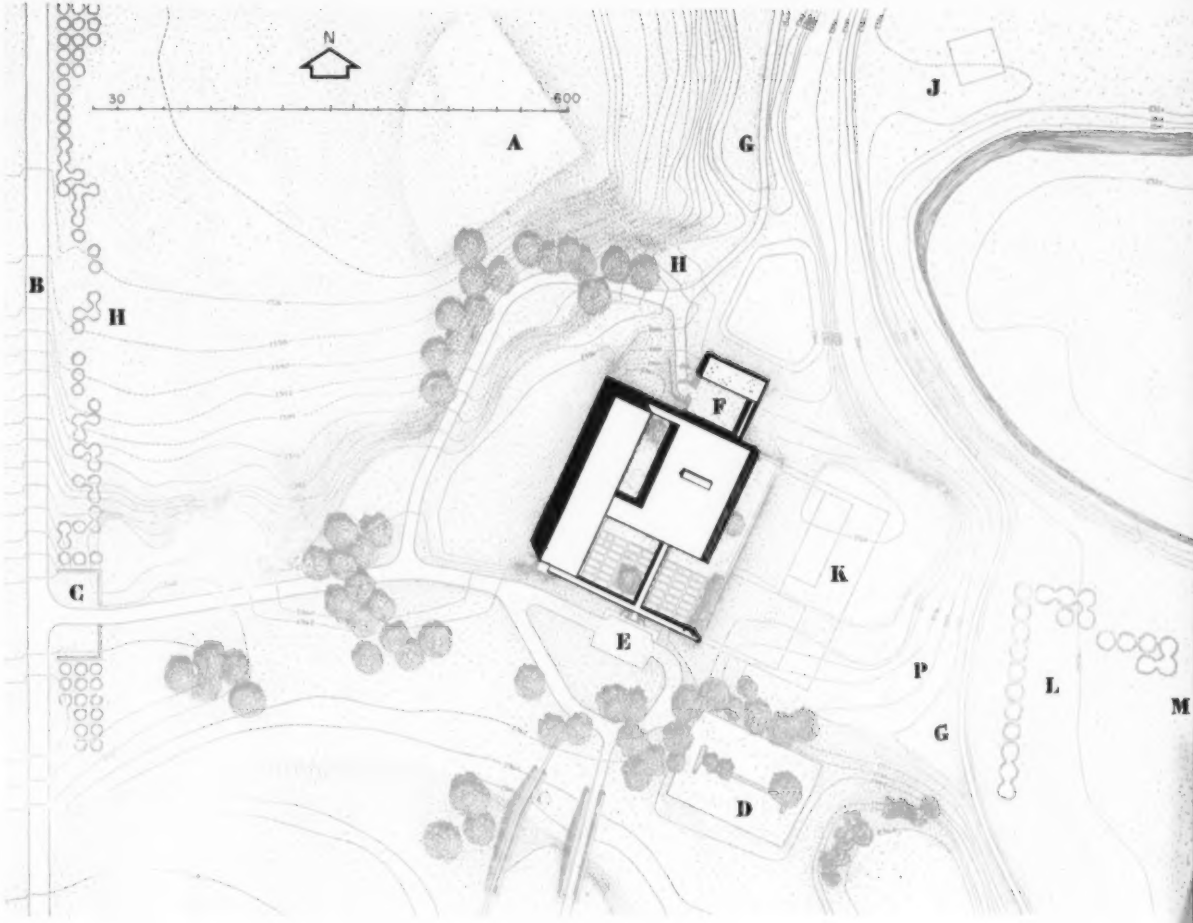
Q: Should the matter of the budget and its influence be introduced now or later during our talk?

A: Well, people naturally think in terms of money and how much buildings cost; perhaps more so in the case of women than men. The sisters took a realistic attitude; they were budget conscious. The result was, that whether we liked it or not, cost influenced us on every question. It was almost as though our thinking had been thrown into a certain gear for the trip. Within this discipline, the comprehensive plan was conceived as generously as possible with the thought that the budget would become the bridge between it and that part now proposed for the first stage of construction.

Although the budget assumed great importance at first, it carried less weight once the sisters understood its effect upon the planning process.

Q: In what respect was the site and the general environment a dominating factor in the design?

A: This is an empty piece of land; a hillside in a vast wilderness . . . in the foothills of the Rockies . . . often raked by violent winds from the



SITE PLAN, STAGE ONE

A Student Recreation
B County Road
C Entrance Gates
D Parking
E Main Entrance & Parking
F Service Yard, Garage & Pump House
G Service & Farm Roads
H Screen & Windbreak Planting
J Existing Farm Buildings
K Second Stage Dotted
L Orchard
M Convent Outdoor Recreation
N Cemetery Processional Way
O Stations of the Cross Way
P Vineyards

north and west so that trees grow easily only in the ravines. The character is harsh, wild, western — and impressive for those very qualities.

Here you must make a strong statement or it will be lost in a tremendous wasteland. Despite nearly limitless areas all about, their state capitol is vertical; evidence of the need for a positive kind of building.

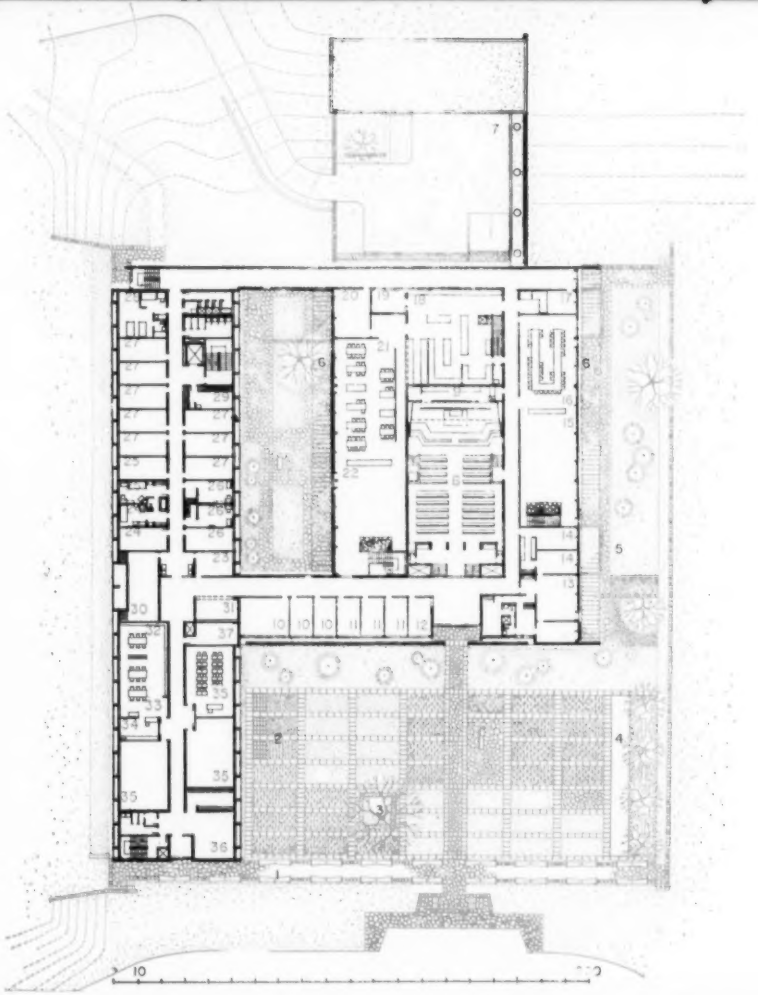
This building group should be a social island in such a land; a cultivated area, landscaped and controlled; a retreat. And this island should have a bold shape if it is to contrast effectively with the wilderness.

Q: Was there a distinguishing characteristic in the traditions of the Benedictine order that exerted any particular influence on the design?

A: Yes, a positive attitude which is primarily optimistic in nature. These nuns are not of a cloistered order; they are outgoing; operate schools, hospitals, etc.

Q: Were there any significant or influential elements in the social traditions or architectural attitudes of the people in the region?

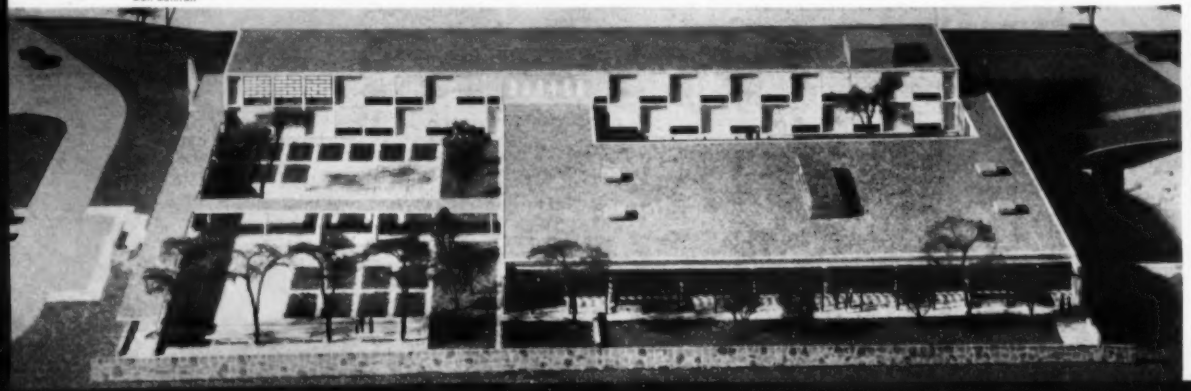
A: Not importantly; the attitude of the clients was a weightier factor. We did choose local brick, which we liked and felt was appropriate. It is rough textured and light buff in color; contrasts nicely with concrete. We also chose local field stone.

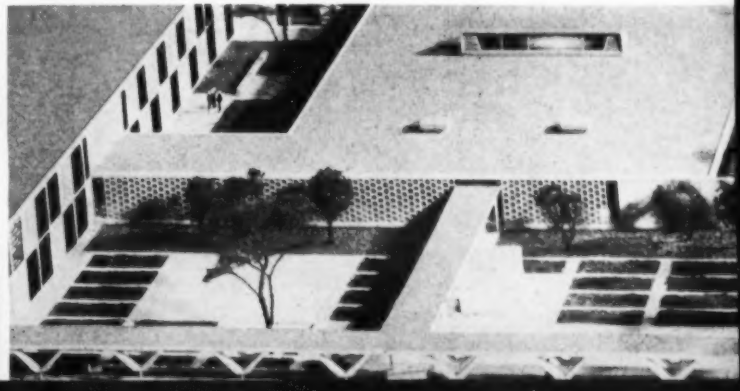


MAIN FLOOR, STAGE ONE

1 Open Cloister
2 School Garden
3 Outdoor Classroom
4 Pool
5 Convent Garden
6 Terrace & Arbor
7 Service Court
8 Chapel
9 Sacristy
10 Administration
11 Reception Rms.
12 Portress
13 Chaplain's Apartment
14 Guest Dining & Serving Kitchen
15 Community Room
16 Refectory
17 Employees' Dining & Serving Pantry
18 Main Kitchen
19 Dishwashing
20 Aspirants' Dining
21 Student Dining
22 Student Lounge
23 Community Reception
24 Prioress' Office & Bedroom
25 Reverend Mother's Office & Bedroom
26 Secy's Office & Bedroom
27 Sisters' Rooms
28 Infirmary
29 Pressing Room
30 Community Library
31 Bookshop
32 Faculty Study
33 School Library
34 Library Workroom
35 Classrooms
36 School Entrance & Cloakroom
37 Audio-Visual Storage

Ben Schnall





Q: Among the varied functions, did one in particular exert an overriding effect upon the design? Is there a key that unlocks the plan?

A: In terms of plan, we had to have a centrally located joining and interlocking of the convent and student facilities, which had to be — at the same time — clearly separate. There was also the idea that this was to be a community center.

Q: What led to this arrangement of elements?

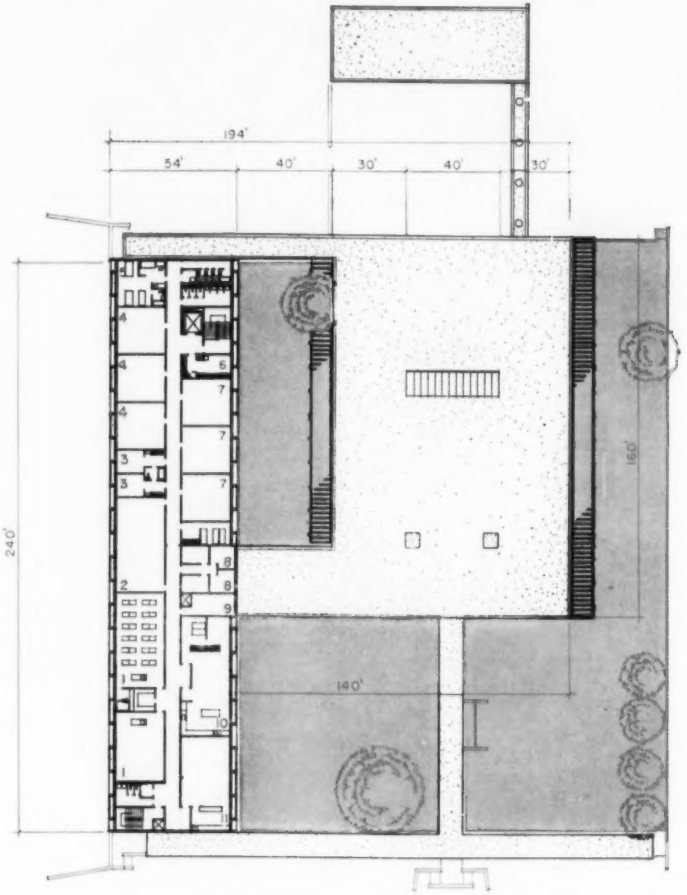
A: The planning process here compares with city planning in that it must take into account a step-by-step development, always respecting the existing complex that changes with reluctance.

This is actually a dynamic plan, which constantly changes but must constantly work. The changing aspect influenced the choice of materials and structure; brought about the system of bearing walls with non-bearing partitions for flexibility of use. The flexibility requirement caused us to develop a façade pattern which can collect partitions for a variety of room sizes, apportioned in 3, 4, or 5 ft units.

The traditional monastery plan comprises a single-loaded corridor and a central courtyard, which gives one a sense of his relationship to the whole; whereas in a double-loaded corridor scheme one tends to lose his sense of orientation. In North Dakota, the severe climate precludes the use of a central court for circulation. Here, we grouped the elements functionally, connected them by cloisters, and produced several courtyards (or gardens) for various public spaces, such as the dining court, the Convent cloister, the visitors' garden, etc.

Q: What determined the selection of the principal materials that one will see?

A: The buildings must be fireproof and permanent; must have the character of "lasting one hundred years."



UPPER LEVEL, STAGE ONE

1 Science Classroom & Lab
2 Study & Recreation: Novices & Postulants
3 Novice Mistress & Assistants
4 Postulants' Dormitories
5 Infirmary
6 Pressing Room
7 Novices' Dormitories
8 Music Practice Rooms
9 Music Teaching Studio
10 Home Economics Rm.
11 Art Room

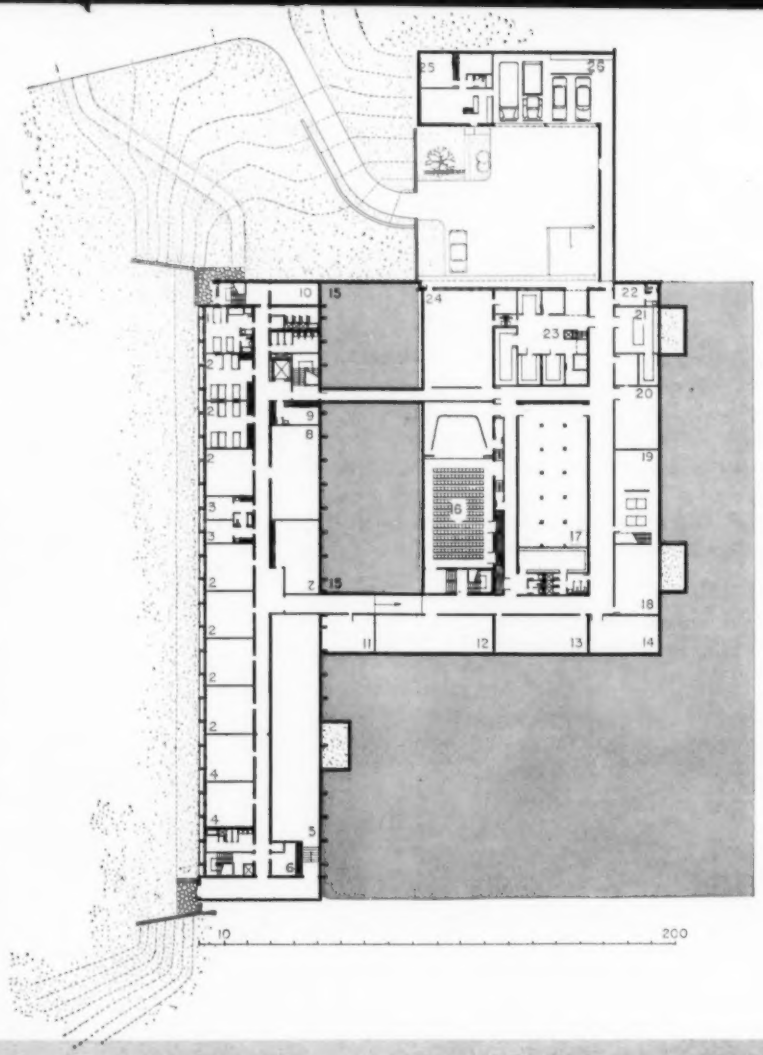
In expressing concrete column and slab construction, one is led easily into the monastic idea of cells or cellular expression. Another important factor was local experience in handling certain materials.

Q: What was your thinking in regard to the use of color for the various buildings?
A: We selected — for the exterior — a combination of white concrete, light buff brick, blue window bulkheads, terra cotta colored quarry tile, creosoted wood (dark), and natural field stone.

Q: Is that a Breuer blue?
A: You might say so. It is a mixture of ultramarine and cobalt, which yields a blue that is almost pure and not too hot or too cool. The result is a clear color, not one muddied or grayish.

Q: Will you use this for the interior as well?
A: Interior colors are not determined yet. We want to present a studied selection to the occupants for their individual choice. We have done this before (for the Monastery) and were rather surprised and pleased at their choices, which were predominantly strong, gay colors. We expect more or less the same result here.

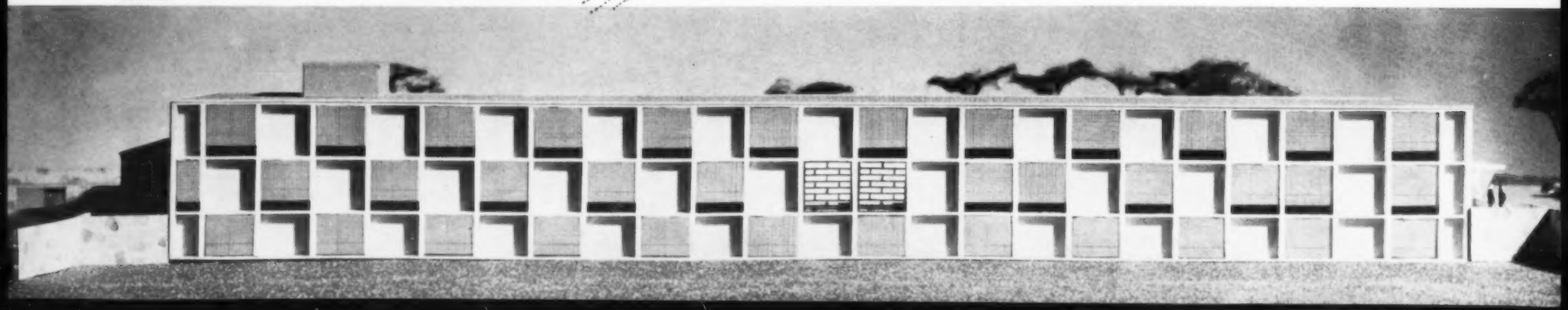
Q: The entrance seems to have been considerably played down. Why is this?
A: The present entrance that you see in the model photographs will eventually be a secondary one.



LOWER LEVEL, STAGE ONE

1 Infirmary
2 Student Dormitories
3 Mistress & Assistant
4 Aspirants' Dormitories
5 Mechanical
6 Aspirants' Pressing Rm.
7 Students' Game Rm.
8 Trunk Storage
9 Pressing Rm.
10 Outdoor Furniture Storage
11 Temporary Archives
12 Office Storage
13 Mechanical
14 Storage
15 Unexcavated
16 Student Activities & Auditorium
17 Drama Equipment & Storage
18 Sewing
19 Convent Games & Crafts
20 Linen Storage
21 Altar Bread & Stock
22 Employees' Lounge
23 Kitchen Receiving & Storage
24 Laundry
25 Caretaker's Apartment
26 Maintenance & Garage

Ben Schnall



Q: In the present stage most of the rooms for students and visitors face west. Could you explain your provisions for heat and glare control?

A: There are certain advantages in a western orientation. For example, it picks up summer breezes and in winter offers the benefit of radiant heat from the sun. Here, glare control is provided by the 24 in. deep concrete cellular gridiron as well as by the infilling screening, which consists of small, tilted horizontal slats. In my own house in New Canaan, where there is provision for the sun, we have found the west rooms very cool and comfortable in the summer.

Q: Could you tell us something about the cloister walkway supports; why you used that shape for them?

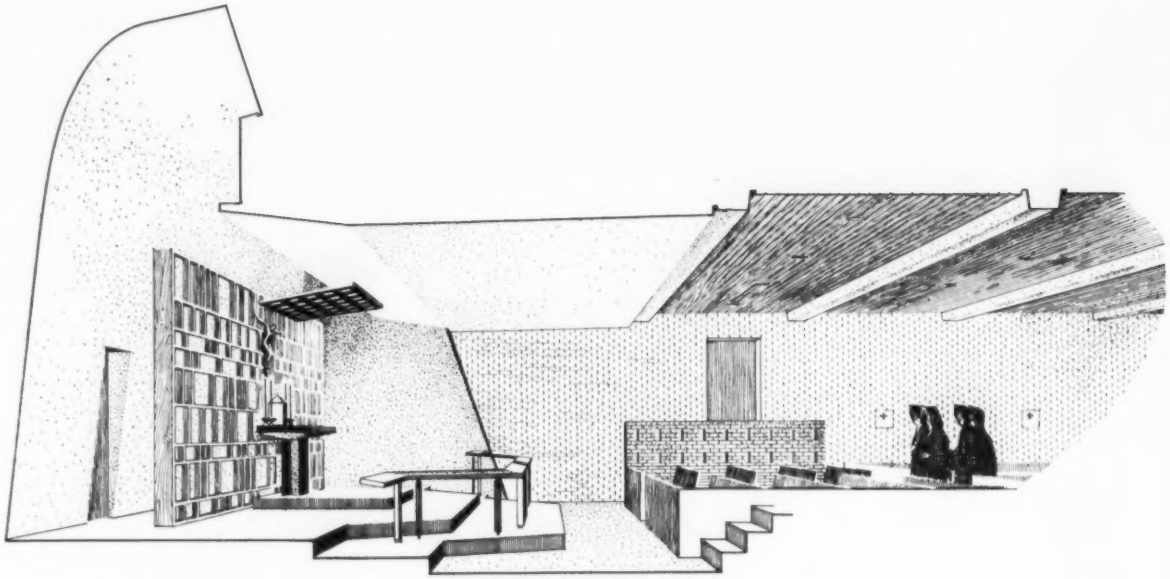
A: First, because we get two supports by using only one concrete form. Also, they provide a kind of counterpoint to the verticality of the rest of the design.

Q: What kind of heating and ventilating system will be used?

A: It was decided to use natural gas as the fuel because it is readily available, easy and economical to install and to maintain. Also, no great chimneys are required as in some other systems and each new building as it is added can have a separate unit. There will be a forced warm air heating system with artificial ventilation in public spaces.

Q: Will you explain the construction stages you have mentioned several times?

A: The comprehensive plan is the long range one which, due to cost, will be built over a span of years. At present, stage one will be built. We have, for convenience, grouped further developments — although several in number, into what we call stage two.



The chapel will provide a dramatic focus for the scheme; will follow Benedictine tradition, yet be contemporary in feeling. The side walls will be brick, painted white, while the cycloramic shaped north wall will be finished in gold leaf applied over rough-troweled plaster. This surface will glow in a wash of light coming from the concealed skylight by day or the troffer by night. The reredos screen, altar railing, benches, and ceiling planks will be of dark stained wood; the floor of natural quarry tile. The perforated baldachino will be painted a vivid Chinese red and the curtain back of the screen — in symbolic color — will be changed with the season, as is the custom. Pin-point spots concealed by the ceiling boards will provide congregation lighting.

Architecture of Brazil

By Dr. Carleton Sprague Smith

THE BRAZILIAN PAVILION at the New York World's Fair in 1939 indicated that there was a new architectural movement in Portuguese-speaking America, and soon afterwards Philip L. Goodwin's comprehensive study *Brazil Builds*, published by the Museum of Modern Art (1943) supplied an excellent account of it. The present bird's-eye view recalls the past quarter century and summarizes this development as it now stands.

At the outset, it is well to remind ourselves that Brazil is larger than the United States plus another Texas, and that it has a tropical climate with a population of 55,000,000 inhabitants, concentrated primarily along the sea-coast. The architecture of colonial days was a development of Portuguese baroque, the plantation life and mining cities producing rambling rural fazendas, graceful administrative buildings and two-story town sobrados. The churches were pleasantly decorated, the white stucco walls with carved stone and doorways and window moldings and blue tiles contributing to the variety of the scene. The contrast with the English colonies was striking, as the writer tried to point out a number of years ago in an article comparing Williamsburg and Ouro Preto.

In the early 19th century a French mission headed by Lebreton (1816) brought in a neo-classic style, Grandjean de Montigny and Louis Vauthier being its chief architectural exponents.

The late 19th century was dominated by a Beaux-Arts eclecticism — many of the architects were actually Germans and Italians — and the first quarter of this century saw the mushrooming of bungalows, pseudo colonial private dwellings — an American mission style — and pretentious academic public buildings too often unsuited to the scene.

The famous São Paulo Semana de Arte in 1922 — the parallel of our New York Armory show of 1913 — marked the beginning of Brazilian artistic independence and soon afterwards two Paulista architects, Gregori Warchavchik and Flavio de Carvalho, started the movement which has had such an astonishing growth. An article by the former "About Modern Architecture," published in the Correio de Manhá, November 1st, 1925, laid down functional principles which today are commonplaces.

Warchavchik's house in Vila Mariana opened in 1927 is one of the earliest landmarks of modern architecture in Brazil. A two-story structure with square simple lines and glass doors leading out onto stone terraces, it brought a new note into Brazilian architecture. Surrounded by a palm and cactus garden designed by his wife, Mina Klabin, the house came to identify itself with the local scene, and in 1929 Le Corbusier called it among "the best adaptations of modern architectural constructional tendencies in the tropical landscape." Some reservations were made about details but the ice had been broken, and when a casa moderna by Warchavchik was exhibited in the Rua Itapolis in the suburb of Pacaembu (1930) it received enthusiastic encomiums from the avant garde critics. Everything was carefully worked out — the furniture being designed by the architect — and sculpture by Lipschitz, Brecheret, Brancusi and Celso Antonio was featured. The house, however, did not consciously try to be Brazilian — simply modern. When a conservative architect attacked the casa moderna saying it would devaluate the land around it, he was challenged by an adherent of the new movement to build a house as original himself.

Warchavchik had been trained in Italy at the Instituto di Belle Arti, while Flavio de Carvalho had studied at Durham University. The versatile painter and civil engineer, however, was really self-taught in architecture, and his designs were largely conceived out of his own head. Both men were considered extremists. Meanwhile in Rio de Janeiro the sensitive Lucio Costa, educated in England and France, inspired great confidence by his gentle manner and innate good taste. Nineteen-thirty was the year that Getulio Vargas took over; at first as a liberal, forward-looking president who promised to give the people more equitable government and modernize Brazil. It was in this spirit that Lucio Costa was named Director of the Escola de Bellas Artes in Rio de Janeiro and being conscious of the need for a shot in the arm he invited Warchavchik and A. S. Buddeus to join the faculty. The conservative Instituto

Paulista de Arquitetos formally protested the nominations of "futurist professors" and ultimately both men were forced to leave since they had not been appointed in open competition. Meanwhile Warchavchik and Lucio Costa set up an office in the Federal Capital and a Salão de *Arquitetura Tropical* was attended by Frank Lloyd Wright. Among the draftsmen working for the new firm were Carlos Leão and Oscar Niemeyer.

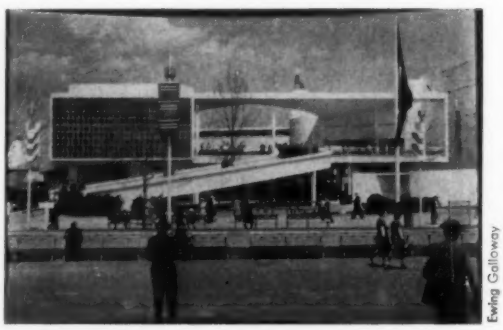
Added impetus was given to the movement by the foundation of a Sociedade Pro Arte Moderna (SPAM) inspired by Warchavchik and a rival group CAM (Clube dos Artistas Modernos) led by Flavio de Carvalho. This healthy division of opinion kept people talking and thinking and, since the painters were strongly represented in both organizations, Brazilian architecture tended to develop a plastic sense, one of its most characteristic features. During this period Rino Levi's Columbus office building (1932) attracted a great deal of attention and was symbolic of the change being felt in many quarters.

The great turning point of Brazilian architecture was Le Corbusier's visit of 1936; it was he, together with Lucio Costa, Niemeyer, Jorge Moreira, Alfonso Reidy and others, who made plans for a new Ministry of Education, although the finished product, a modification of the original idea, was carried out exclusively by Brazilians on another site. The result, at any rate, in the words of Philip Goodwin, was "the most beautiful government building in the Western Hemisphere." The movement, therefore, which had started in the industrial city of São Paulo, was given official encouragement in the federal capital, and this marked a real step forward. Having a Minister of Education sympathetic to the new principles helped enormously. Also, after the opening of Rio's Santos Dumont Airport (designed by the Roberto brothers and featuring an attractive hydroplane station by Atilio Corrêa Lima) many converts were made.

In 1939 the New York World's Fair was recognized as an architectural opportunity by the Brazilian government, and Lucio Costa and Oscar Niemeyer were chosen to erect a pavilion on the Flushing Meadows which would embody the new principles of the country's architects. This design showed some of the features which characterize the contemporary movement: purity of style, a subtle curved façade, an open ground floor on pilotis capable of accommodating large crowds, a wide ramp leading to the second floor, honey-combed louvers to keep the sun out, attractive tropical plants in and outside of the building, a coffee bar, an outdoor restaurant, a mural by Portinari, and an aviary.

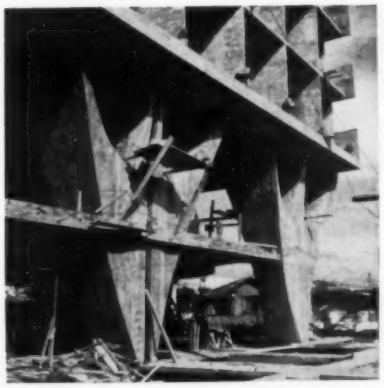
A wave of construction followed, inspired by the new principles, and although unimaginative constructor-architects are found in Brazil, one is impressed by the dominant role of the contemporary school. Part of this is due to the fact that many of the designs for buildings are chosen on a competitive basis, and the judges, professional and governmental, are imbued with the philosophy of the contemporary style.

During the past twenty years in Rio, São Paulo and



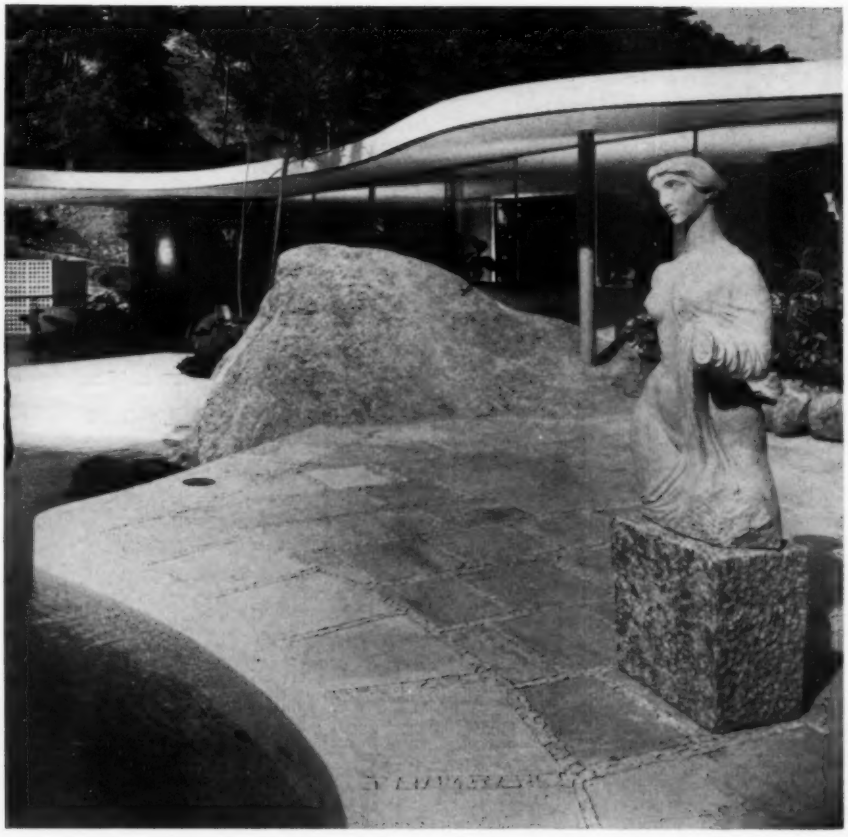
Ewing Galloway

Brazilian Pavilion; N. Y. World's Fair, 1938. Niemeyer



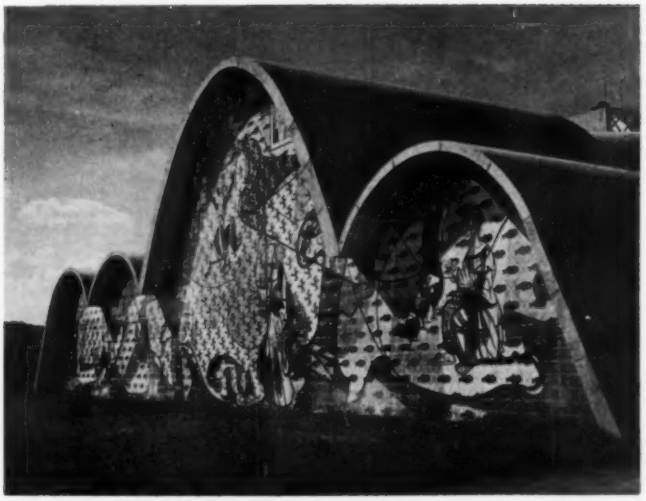
Marcel Gautherot

Construction detail. Niemeyer



R. Maia and Francheschi

House for the architect; Rio de Janeiro, 1953–1954. Oscar Niemeyer



Church of St. Francis; Pampula, Minas Gerais, 1943. Niemeyer

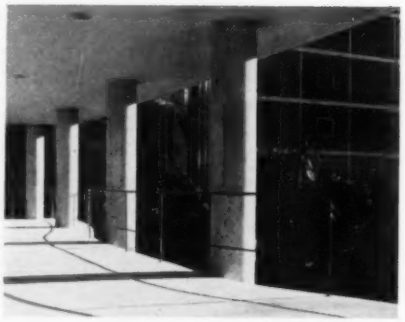
Belo Horizonte there have been such administrators as Gustavo Capanema, the Minister of Education who employed Le Corbusier; Prestes Maia, the engineering Mayor of the coffee capital, also active in town planning; and Juscelino Kubitscheck, former Mayor of Belo Horizonte, Governor of Minas Gerais and now President and still a champion of modern buildings.

Mario de Andrade, who headed the Departamento de Cultura in São Paulo in the 1930's, was one of the most brilliant intellectuals in the Americas, and his influence was felt in architecture as well as in literature and music. He had the ability to gather people together and make them talk and justify their principles. An article about Portinari's frescoes of neo-Byzantine saints for a modern chapel at Brodowski or an essay on *The Plastic Arts in Brazil* for *La Nacion* of Buenos Aires — these were things he tossed off brilliantly. In explaining how Brazilian architecture came of age the role of this critic was unique and must not be overlooked. The frequent time out for a cafezinho (a small cup of black coffee) may disturb American efficiency experts but it leads to clarification and artistic results. In short, aesthetic theories and the question of what a national architecture should be are discussed more by Brazilians than Americans. Architects in Rio and São Paulo today have their own professional organizations, the leading one being the Instituto de Arquitetos do Brasil. In São Paulo the Instituto has its own building where many of the members have installed their offices, and its dining room brings them constantly together. As in the United States, the profession has begun to work more and more in teams. In 1953 the Fourth Brazilian Congress of Architects was held in São Paulo, and about fifty of the 470 people attending the sessions were from abroad. Most distinguished, perhaps, among those taking part in the proceedings were Walter Gropius and Alvar Aalto. Some people complained that concrete goals were not attained — relatively few theses were presented — but others opined that a congress is primarily a "get-together," and that if people come to know one another, that in itself is a step forward.

Not everyone approves of what Brazil is building. A lecture by the Swiss architect Max Bill given in June of '53 at the Faculdade de Arquitetura in São Paulo took the national school to task for excessive pictorialness, and his remarks were instantly published and widely debated. In other words, a great deal of thought goes into modern architecture in Brazil, and there seems to be a desire to develop a school which will, for better or worse, be recognized as Brazilian.

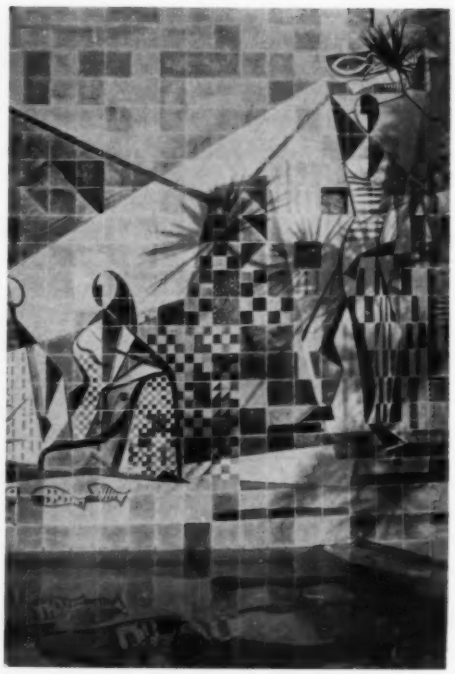
Lightness

What are some of the chief characteristics of Brazilian architecture? First and foremost, the general lightness of the buildings. Whether one looks at a single story dwelling or a skyscraper, there is a desire to get away from stolidness. Reinforced concrete construction does not require large beams, and the combination of stucco, glass and tile can give an airy effect. The heat of the sun calls for covered walls, particularly those exposed to the

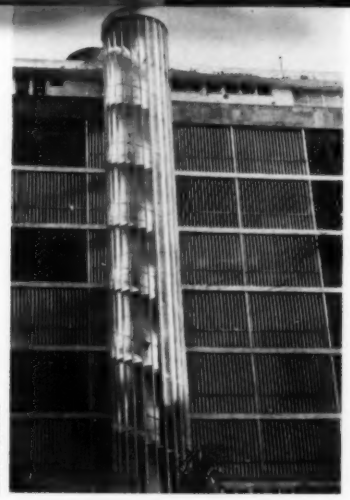


Rollie McKenna

Detail, Apartment Houses; Rio de Janeiro, 1947–1953. Lucio Costa

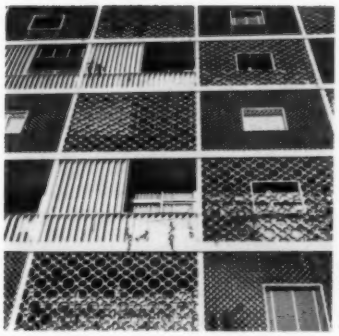


Mural for Walter Moreira Solles; Rio de



Rollie McKenna

Detail, Apartment Houses; Rio de Janeiro, 1947–1953. Lucio Costa



Rollie McKenna

Detail, Apartment Houses; Rio de Janeiro, 1947–1953. Lucio Costa

Rollie McKenna

Duchen biscuit factory; near São Paulo. Oscar Niemeyer

Marcel Gautherot

Janeiro, 1953. Olavo Redig de Campos

Marcel Gautherot

Garden residence for Walter Moreira Solles. Olavo Redig de Campos

north (everything is turned around below the equator) but southern exposures feature glass walls covered with screens or brise-soleils, both movable and static, and counterbalance excessive massiveness. In order to take advantage of the shade, a major part of the ground floor is often left open, particularly on larger buildings, and this enables people to walk underneath and experience a pleasant feeling of spaciousness. The normal structural column or piloti is somewhat heavier in aspect but stronger and therefore fewer are required. This feature might also be called a Brazilian trademark today.

Color

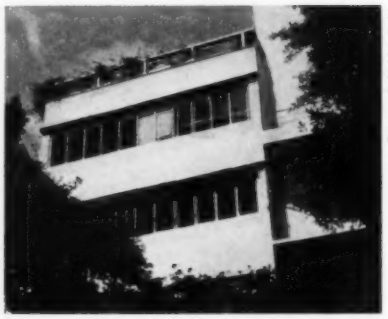
The average skyscraper in the United States is rather drab looking. In Brazil such colors as pink, blue and yellow have long been used to decorate stucco walls. Water towers on the tops of roofs today may be painted blue, glass windows tinted green, a whole wall or column built of pinkish-gray granite. Roof gardens, tiled patios and flower beds surrounding buildings add further gaiety, and Brazilian flowers and plants planted in banks of color like a modern canvas are very effective. Combining these features with stone or metal sculpture makes for an eye-filling experience.

Materials

As everyone knows, Brazil has specialized in the use of reinforced concrete. Lacking steel girders (though this is less and less so as the country has tremendous iron deposits, and during the war a huge steel mill was erected at Volta Redonda) the country turned to other solutions. Reinforced concrete has much to recommend it; it is cheaper there than steel and more malleable. There is plenty of good sand in Brazil, and several companies are making cement. The ingenuity of Brazilians was seen a few years ago when a corner of a large skyscraper in São Paulo started to sink. Nothing daunted, the engineers froze the unstable soil and the building was jacked up and put on an even keel.

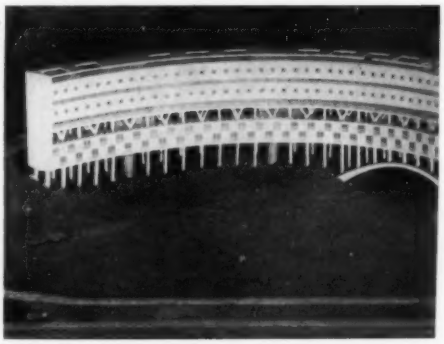
Once the skeleton of a building is finished, walls of stucco are applied around the door facings and windows, frequently of stone. Sometimes the wall surfaces are covered with thin slabs of native pinkish gray granite, brown itacoloni sandstone, marble from Italy or Argentine travertine. Chromium and glass are also featured, while tiles (generally blue and white) are used both for utilitarian and artistic reasons. They are easy to keep clean and lend a bright note to the architecture of the country.

Sometimes simple patterns are chosen but the tendency today is to have painters design a whole wall after which the tiles are especially baked, a practice not unlike the cartoons of Rubens and Jordaens for woven tapestries. The outstanding tile designers are the artists Candido Portinari and Roberto Burle Marx, the best known firm with kilns Matarazzo. The effect of these imaginative panels is often thrilling and, whether the designs are concrete or abstract, they are always decorative. Vitreous blue tile is also used for covering roofs and terraces of buildings and has proved most serviceable.



George E. Kidder Smith

House; São Paulo, 1927.
Gregori Warcharchik

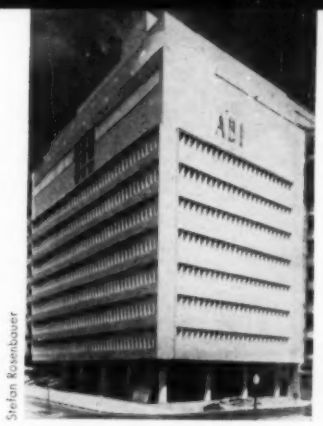


Fritz Neuberger

Apartment Housing.

Marcel Gautherot

Garden for Mme. Odette Monteiro. Roberto Burle Marx

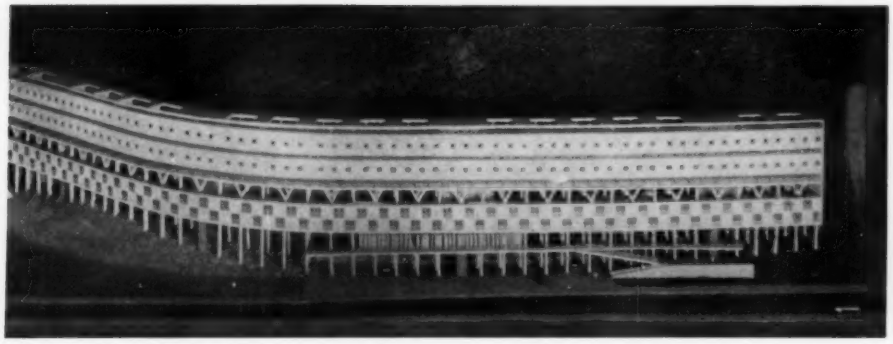


Stefan Rosenbauer

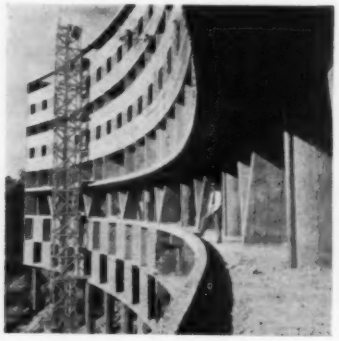
Brazilian Press Assoc. Building; Rio de Janeiro, 1947. Marcel and Milton Roberto

State Secretary of Foreign Relations

Ministry of Education and Public Health; Rio de Janeiro, 1937–1942. Lucio Costa and others



Rio de Janeiro, 1948–1950. Alfonso Eduardo Reidy



Detail of Apartments

Although there is excellent wood for building, tradition has been against its use. Masonry has been preferred, and because of the damp tropical climate there is a general fear of termites. One does find interior woodwork and furniture — the remarkable working of Jacarandá in colonial times for sculpture and decorative chairs, tables and highboys was particularly impressive — and some of the best modern buildings gain greatly by taking advantage of the riches of the forest. The arbor-like lattices which served as shutters in the 18th and 19th centuries — perhaps deriving from the Moors — are continued today by numerous designers. We may expect more results in the future from the experiments being carried out with Brazilian wood.

Workmanship

In any discussion of materials mention must be made of local artisans. Obviously their taste is an element to be considered and the care with which they carry out assignments is of tremendous importance. A good number of stone workers are Spanish, Italian or Portuguese, and in general emigrant workmen are highly prized. Brazilian architects think well of the carpenter trade but complain that the wood-workers do not cure lumber long enough, and it sometimes warps because it is not sufficiently dry. Tile layers and stucco pourers are generally sloppy, it is claimed, and lack of thoroughness is one of the great building problems in the country. It is not uncommon to see a structure several years old with holes in the plaster near the ground.

The *acabamento* (completion) of a job is perhaps the weakest link in the architectural chain today. All buildings require a certain amount of upkeep, and this is not fully realized in Brazil. Cheap materials and poor construction can hurt the reputation of a national architecture, and while there has been improvement in this field, there is room for more.

Plasticity

Brazilians have a sense for curves and undulating forms and a delight in rhythmic patterns — witness the samba. If architecture can be described as frozen music, some of the buildings being put up in Brazil today are related to the art of Euterpe. The undulating marquees and sunshades, the gay ceramic floors, the decorative sidewalks with their dancing patterns made up of small stones (paralelipipidos — the onomatopaic word is extremely expressive), the designs of the gardens treated like mosaics and the small splashing fountains in which one finds anything but static pieces of sculpture give a richly plastic effect.

I would like to close by quoting from Lucio Costa:

"Architecture belongs both to the science of construction and to the plastic arts, for from the conception of the project to the presentation of the finished work, there is always a margin of choice within certain limits — maximum and minimum — determined by calculations, prescribed by techniques, conditioned by the situation, made necessary by the function, or imposed by the project program. It is therefore to his feelings that the architect must appeal when he chooses within the extremes, in the scale of values, the plastic forms appropriate in every detail to the uniting of the projected work. The plastic intention or aesthetic orientation which such a choice presupposes is precisely what distinguishes architecture from ordinary construction. On the other hand, architecture also depends fundamentally on its epoch, its physical and social situation, the materials it employs and the techniques derived from them; and finally it is dependent on the objective in view and the amount of financial support, i.e., the all-over project program.

"One may thus define architecture as construction conceived with a particular plastic intention and function within the framework of an epoch, a milieu, a technique and a program."

Lucio Gosta stresses the fusion of the two concepts: the plastic-ideal and the organic-functional. "If more architects," he says, "with this ever-expanding knowledge and technique, were to study the problems of architectural expression, participate in discussions of contemporary art and recognize the plastic principles underlying all the arts, and then, like painters and sculptors, create with passionate conviction, their work would take on a noble dignity which would lead them to a new concept of the monumental. This monumentality would include the graceful presence of trees, bushes and fields because the main characteristic of modern city planning, stretching from the heart of the city through the suburbs into the country, is that it abolished the picturesque as it incorporated the tricolor into the monumental. It is taken for granted that this monumentality appears not only in such predictable places as city centers but also in other structures such as factories, industrial buildings, stations, bridges, highways and even in such unexpected places as hangars, silos and administration buildings on industrialized farms for the rural population."

The coming age of an architecture is worth studying, and Brazil's rapid growth can be a lesson to us all. There have been ups and downs — many buildings which win competitions are never built for lack of funds. The city of Bahia has a magnificent municipal plan for solving transportation problems in its precipitous terrain; it has never been carried out. While the Avenida Presidente Vargas in Rio is broader than the Champs Elysées and a really handsome and extremely useful artery, the skyscrapers being erected on it are without interest and mere contractors' speculations. On Copacabana beach apartment houses are packed in next to each other like sardines, and the opportunity to build graceful structures surrounded by luxuriant tropical gardens has been missed completely. Fortunately, however, the zoning laws are being improved, although "special interests" generally find ways of circumventing them. Brazilians have made mistakes but their cities are still vastly more attractive than the majority of those in the United States. Let us hope that our neon signs and other hallmarks of progress will not descend upon them.

TERMINAL BUILDING, LAMBERT-ST. LOUIS AIRPORT

Hedrich-Blessing

Architects: Hellmuth, Yamasaki & Leinweber; Minoru Yamasaki, partner in charge of design; completion of building under direction of St. Louis office, now Hellmuth, Obata & Kassabaum. Structural Engineer: Wm. C. E. Becker; shell consultants, Roberts & Schaefer; consultant during preliminaries, Edgardo Contini. Mechanical Engineers: Ferris & Hamig. Airport Consultants: Landrum & Brown.

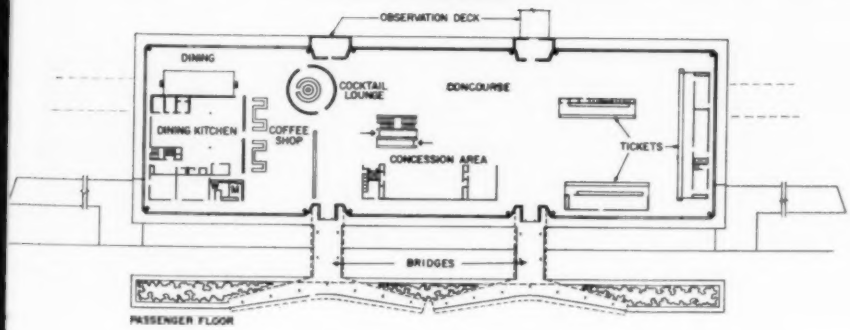
PROUD ARCHITECTURE AND THE SPIRIT OF ST. LOUIS

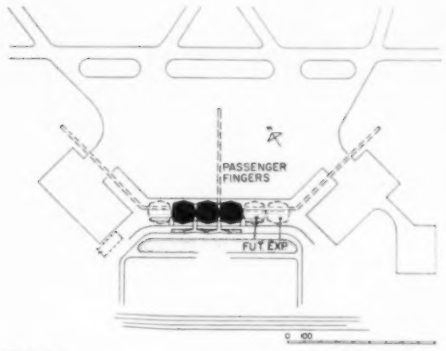
by ***Buford L. Pickens****, Dean, School of Architecture, Washington University*

"The people of this area may be excused a little anticipation. They have waited a long time for this. . . . Even a passing look at the three soaring domes of the new terminal should convince anyone that St. Louis intends to progress with the air age. The new building is both beautiful and practical, for the three arches can be increased to six, and comfort and convenience can grow as air travel grows. The clean lines and clean vistas prophesy a building to be kept clean. Here is imaginative and proud architecture!"

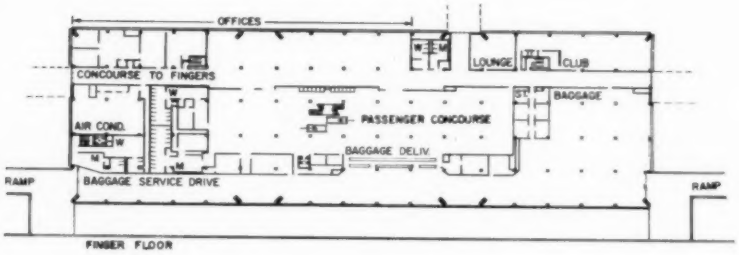
— Reprinted with permission from an editorial in the St. Louis Post Dispatch, written three weeks before the dedication of the new air terminal building at Lambert-St. Louis Municipal Airport

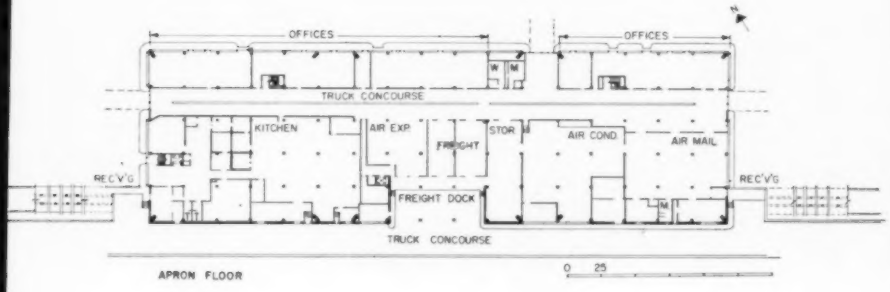
DISCERNING ARCHITECTS will detect in this editorial preview something more than the usual civic pride. It expresses typical citizen reaction to the suggestive form of this rhythmic new thin-shell concrete struc-





SITE PLAN





TERMINAL, LAMBERT-ST. LOUIS MUNICIPAL AIRPORT

Winner of a First Honor Award, the American Institute of Architects, 1956

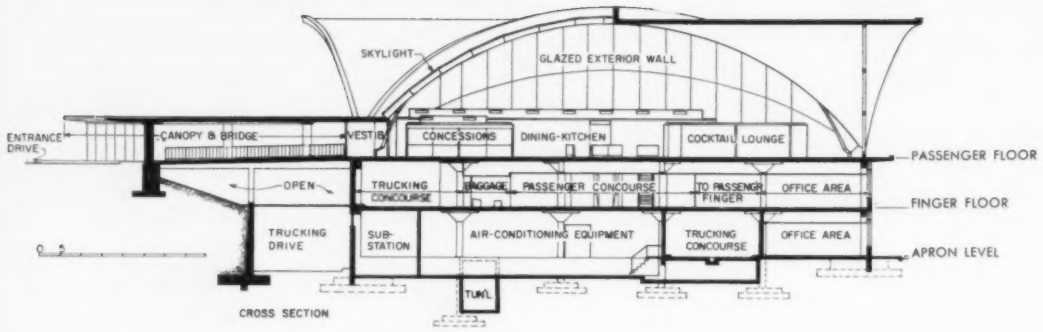
Hedrich-Blessing

ture.[1] No concern here for the common custom of boasting about mere bigness and impressive cost, even though both of these statistics could be cited. Somehow, the essence of the architecture itself reaches the average citizen through a language that is immediately understandable — an architectural symbol whose appropriateness needs no elaboration, but is communicated directly through controlled visual forms. Here, perhaps for the first time, an airport looks, feels and even acts like it belongs amid aircraft — whether you view it from the inside, outside, or circling the field above.

As with many an adventurous project there are skeptics (mostly professionals) who ask: do the ribs support the shell? will the new-fangled system for baggage handling work? what about the acoustical reverberation under the triple vaulted smooth ceiling? and how will the 32-ft high windows stand the sun, wind and rain?

Only time can prove the predictions of the editorial writer quoted above. However, the terminal is worthy of study for it *is* architecture whose bid for greatness does not come from novelty, nor from a technical tour de force. There have been many other large airport buildings and many other thin-shell concrete structures built in recent years. Indeed, the form of the three intersecting barrel vaults is about as traditional as history can provide for "great halls" in public buildings. What then is the significance of this new St. Louis achievement which already ranks beside the Eads Bridge and the Wainwright Building as an architectural landmark? Perhaps the answer is suggested in the comparison with these other structures, viz., the dedication by its architects to a bold and imaginative concept which, once stated, was carried through despite conflicting pressures to compromise.

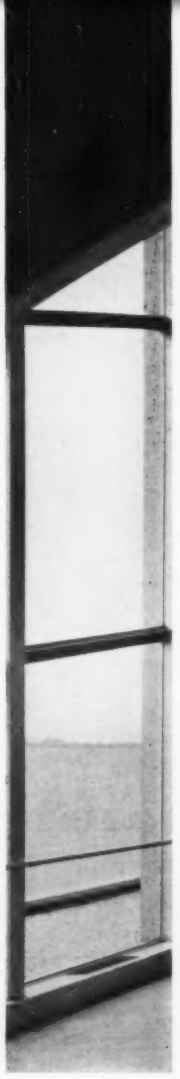
[1] *The current trend to the plastic form of concrete shells for a variety of architectural building types suggests the change from the Greek post and lintel to the Roman arch, dome and vault. Once again vaulted arcades replace trabeated stone. If the M.I.T. Auditorium reincarnates a Pantheon, the Raleigh amphitheater a Colosseum, then the St. Louis Terminal could be the air age version of the tepidarium in the Baths of Caracalla. (Even the editorial writer must have sensed the connotation of cleanliness)*



ST. LOUIS AIR TERMINAL

Section above and two photographs below show 3-level organization: passengers, ticketing, general public at top; passengers and baggage, separated, on middle level; service and operations on lower level. Note in photograph opposite that window mullions carry no structural load; they are designed with slotted connections to the concrete shell above

Hedrich-Blessing



THE PROBLEM posed was similar to that in many other municipally owned airports, i.e., to house and valve the complicated circulation of people, baggage and equipment, where time is the essence and where *most importantly* the whole operation must be financially self sustaining. The sloping site was unusual; and the multi-client relationships were complicated — involving the 8-man airport commission, the seven air lines, the concessionaires, in addition to the usual red tape in dealing with and through the municipal engineering department, Bridges and Building Section.

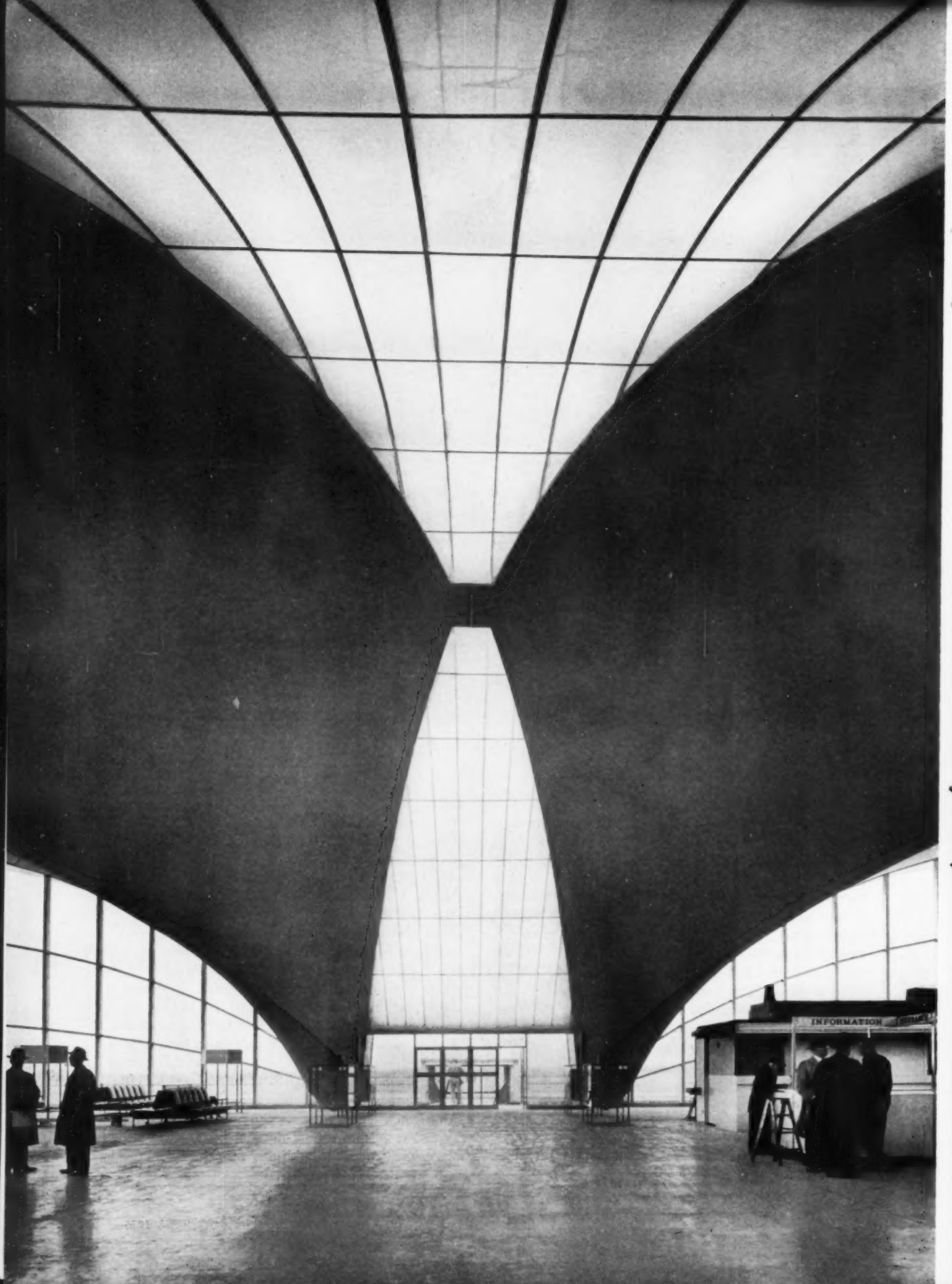
BASIC SCHEME DERIVED FROM ANALYSIS OF SITE. The architects exploited the natural grade differences on the site for their basic centralized plan arrangement; by using elevators, escalators and ramps, the complexities of crisscross circulation were clearly articulated on three levels: (a) the upper level, connected directly with the parking approach, for passengers and general public, with waiting room, tickets, dining, etc., (b) the middle or "finger" level for baggage pickup, ingress and egress of passengers to the planes and (c) the bottom or "apron" level for complete separation of all operations and services, planes on the field side and trucks on the other. Once the three-level plan scheme was set up, the program for the superstructure required two major mandatory features: (a) a great open concourse for maximum ease of circulation, visibility and sense of space and (b) because of the predictable growth of air travel, a means of harmonious expansion as much as one hundred per cent.

DESIGN OF THE "GREAT ROOM." The architects are proud to admit the kinship of their vaulted ceiling and roof form to Grand Central railway station in New York. For, although it left them other problems to solve, it offered a structural unit which more than satisfied the requirements — to span the 120-ft width and to be repeated organically and in rhythmical sequence. The designers found that a new

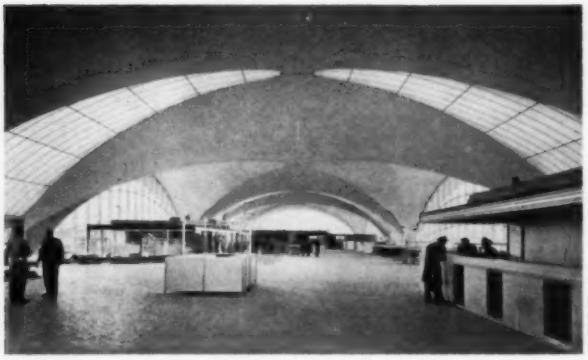
proportion of the low-sprung vaults would reach a height of 32 ft at the center and that the resultant form conveyed no association with heavy locomotives or massive bus depots. Instead, the new arches had a combination of lightness and tension which, when supported on the square base, seemed to float like bulbous clouds or to suggest symbolically the graceful cross section of an airplane wing from which the "lift" is actually derived. The full height of each of the eight archways is glazed (with heat absorbing glass) for light and visibility. Additional lightness comes from the glass and plastic skylights which fill the triangular roof segments at the juncture of the central vault with the other two. Viewed from above, the enormous shells retain their plastic effect like great open parachutes or strange tripartite bras with their diagonal stiffening ribs.

COORDINATION OF VISUAL FORMS. The success of any building as architecture depends in large measure on the degree to which the architects have been able to follow through with subordinate features as carefully controlled as the basic structure. The various facilities in the 412-ft-long concourse, such as the ticket kiosks (east), concessions and waiting areas (center), dining room and restaurant (west), are all kept low to avoid blocking the open arches, and free-standing to simplify the traffic flow. Wherever possible the forms of fixtures and furniture are open and transparent, giving one the feeling of being suspended in an open platform above the field and overlooking the main runway at a position where even the largest planes, airborne, pass by almost close enough to touch. Both the waiting room and the dining room have full view of the field; the enormous height (32 ft) and width (120 ft) of the glazed arches enable one to follow the planes throughout 360 degrees as they circle the field.

Color, furniture and signs as part of architectural form are carefully controlled by the guiding hand of the architect to keep the unity of visual effect. Sep-


INFORMATION

Colorful metal screen (sculptor: Harry Bertoia) defines dining area

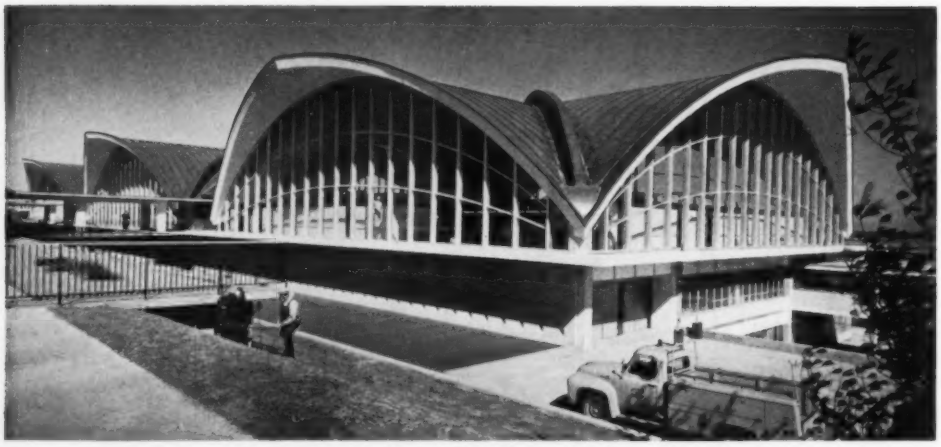


Hedrich-Blessing

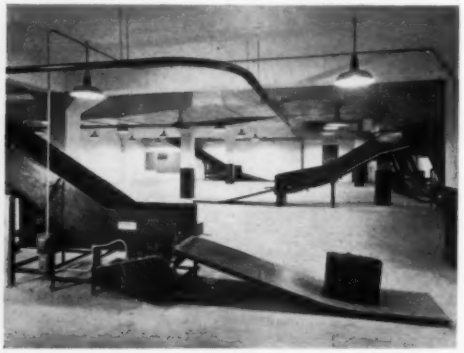
arating the dining area under the west vault from the rest of the concourse is the colorful screen, 48 ft long, 8 ft high and 2 ft deep, designed by sculptor Harry Bertoia. The suspended metal panels are painted in bright, warm hues on the concourse side and in subdued, cooler colors facing the dining room. All large surfaces, ceiling, floor and walls, are nearly neutral, either very light or very dark. The kitchen wall which forms the background for the Bertoia screen is gray, nearly black, and the crisp steel-cage framework of the concession booth is painted black.

CIRCULATION. As one approaches the terminal from the landscaped parking area, the entrance is to the right and the exit to the left of the central vault; the interior circulation is based on this divided traffic. If you are an outgoing passenger you leave the bus or taxi, step under the low, sweeping canopy, cross the 40-ft bridge and enter the building at the right hand entrance. Turning once more to the right, you will then face the ticket kiosks arranged beneath the eastern shell. Each airline has a baggage conveyor (not a chute) which lowers bags after weigh-in to truck pickup on the floor below (thence via ramp to plane). Having checked in, you may then proceed through a waiting and concession area in the central unit. As departure time nears, passengers take an escalator to the lower concourse and out to sub-waiting rooms (with seats) near the 16 active gates along the fingers. When your flight is called, you are checked through the gate to the waiting plane.

If you allow yourself ample time or if you are a visitor, you would probably drop in at the bar or restaurant and dining room overlooking the field on the upper



Truck ramp enters (right, photo above) finger level; trucks pick up baggage (photo below, right) from conveyors from airline counters on floor above. Emplaning passengers descend to finger level by escalators



floor (a total of 547 seats is provided for dining patrons); or you might utilize the many hotel-like facilities within the middle level, viz., toilets, lockers, barber shop, post office, game area, nursery, Western Union, and luxury airline service-club rooms.

The deplaning passenger comes through the finger into the middle level concourse and up to the 70-ft-long baggage counter. He picks up baggage and steps on the conveniently placed escalator which deposits him on the main concourse near the exit to the left of center where he can go out to the auto park unless, of course, he is attracted by the Bertoia sculpture and pauses to shop. Complete separation of incoming and outgoing passengers would be possible but not profitable. Thus the planner must carefully blend the talents of an efficiency engineer with those of the sales psychologist (52 per cent of the building is rentable).

From the human interest viewpoint, by far the most exciting, unique feature of this air terminal is the 40-ft-wide spectator deck which extends 565 ft straight out toward the major runway. Here the airplane "bug" — and who isn't? — can witness the take-off from an intimate distance with neither danger nor interference with operating personnel or the traveler. A portion of this deck is roofed; here it is planned to serve liquid refreshments at tables during the summer.

BAGGAGE. In studying this problem the architects found that where baggage was transferred to elevators, as at Washington National Airport, handling was slower than at terminals where the truck was able to tow the loaded cart directly into the baggage room, as at Willow Run. For this reason, ramps were introduced on either end of the building to enable trucks to pull the carts up to the finger level and into the delivery space. On return trips they pick up outgoing baggage from the lower end of conveyors as it comes down from the weigh-in counters on the floor above.

(Continued on page 278)

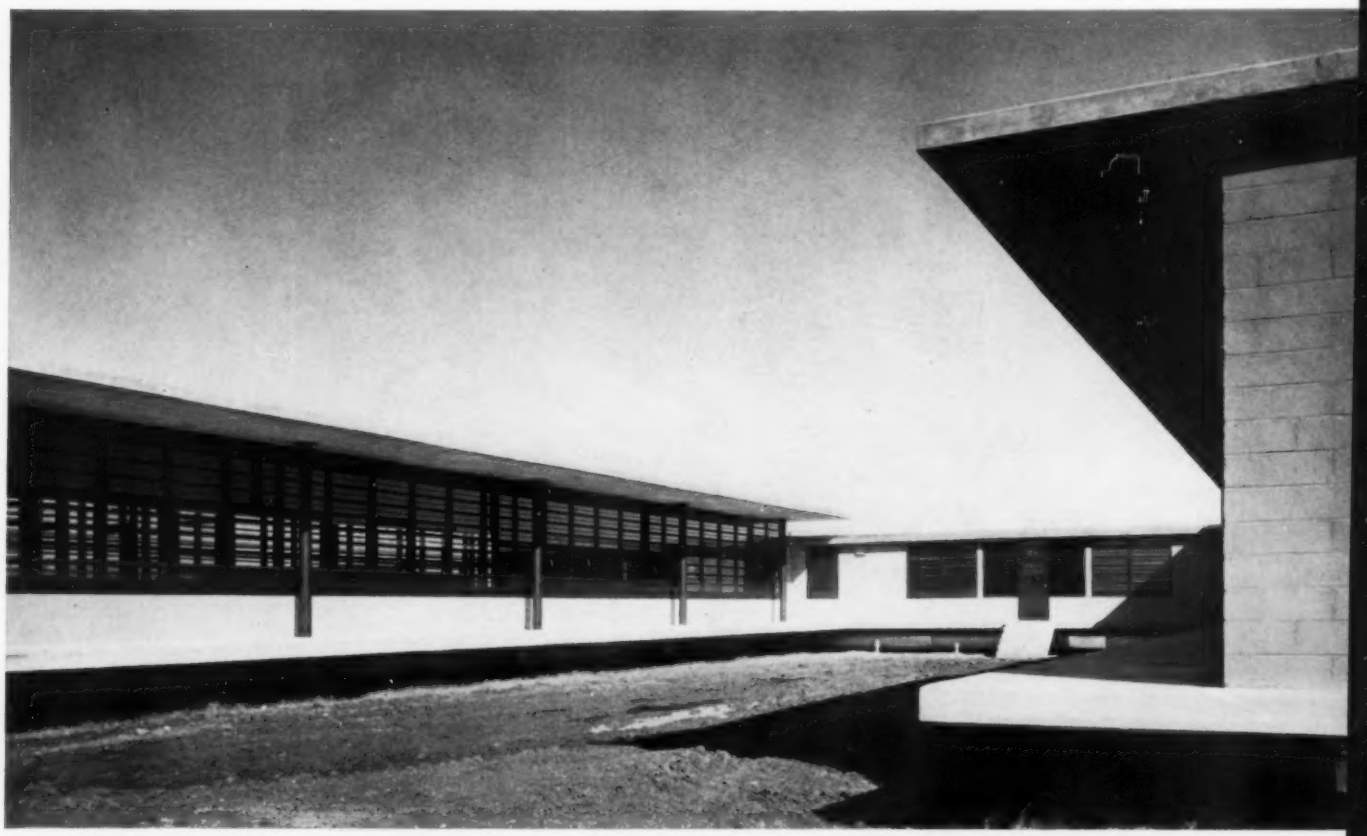
SHOULD PRISONS BE MERELY DUNGEONS?

By REED COZART, Pardon Attorney, U.S. Department of Justice; formerly Assistant Director, Department of Institutions, State of Louisiana

DURING THE PAST FEW YEARS prisons have been severely tested. Disastrous, destructive riots and strikes in many states have caused investigations by public authorities and have created much doubt in the minds of the press and the public as to the validity of the underlying philosophy and the nature of the buildings.

It has become popular to accuse prisons of failure. Within the last year or two, their very existence has been condemned more than once. One book, *Break Down the Walls*[1], written by a prominent journalist, and another, *Diary of a Self-Made Convict*[2], written by an ex-prisoner, charge prisons with utter failure. United States prisons are described in a recent monthly publication[3] as a $215,000,000 blunder.

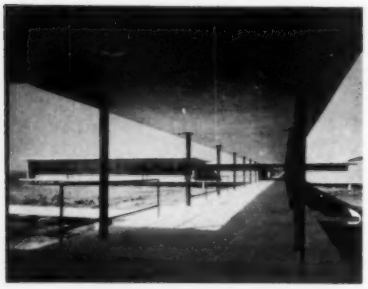
It is undoubtedly true that these books and articles have revealed some shameful facts, and to a certain degree



Dormitories, Louisiana State Penitentiary, Angola, La.: Curtis & Davis, Archts. (Photo: Ulric Meisel)

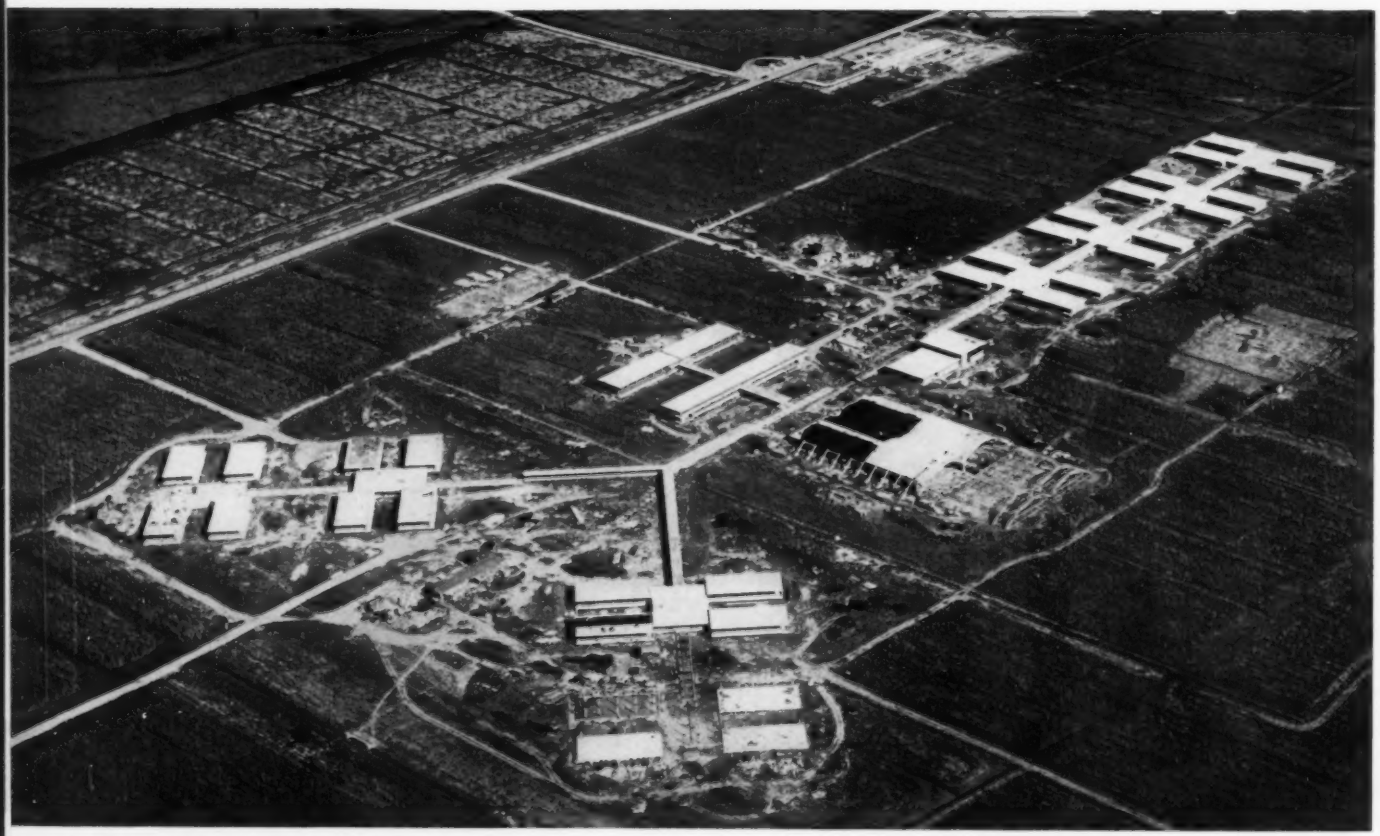
The author explores the close relationship between penal philosophy and prison design. His constructively advanced ideas, based on years of prison administration and building programming, grow from a belief that our American society cannot afford longer to ignore rehabilitation of its unfortunates, and that a new type of prison structure is evolving.

1. Break Down the Walls, *by J. B. Martin; Valentine Books, N.Y. 1953. Paper bound, 25¢*
2. Diary of a Self-Made Convict, *by Alfred Hassler; Henry Regnery, Chicago 1954. $3.00*
3. Nation's Business, *December 1954*



Outdoor corridor, medium security wing, Louisiana State Penitentiary, Angola, La.

have made out a prima-facie case. Conclusions reached in them are not wholly justified, however. The authors have not built up a seriously damaging case against prisons that are properly constructed and operated, though they have pointed out some weaknesses due to bad management. Surely, the time has come when each warden must examine his prison — the philosophy behind it, the physical plant, the program in operation — and see if it is functioning at the best possible level.

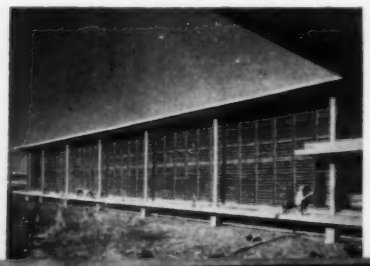


Air photo, Frank Lotz Miller, all others, Ulric Meisel

The total picture is not altogether dark. There are many bright spots, hopeful signs that prisons may yet prove worthwhile. Some of these often referred to are the men's institution at Chino, California, the very progressive institution at Wallkill, New York, and the Federal Institution at Seagoville, Texas.

Whether our prisons will ever meet the test successfully depends upon the philosophy behind their planning and administration; upon their being staffed with sincere, trained, capable specialists in dealing with human behavior prob-

Air view of Louisiana State Penitentiary, taken late in 1954, shows minimum security dormitories in foreground outside fenced enclosure; similar medium security wings far right, inside enclosure; 2-story maximum security cell blocks and twin dining halls, double-arch-roofed, in center — both also enclosed in fence; administration unit at top of photo. Below, detention windows in dormitories instead of small barred openings



lems; upon the degree to which they receive public support of, and community participation in, their programs; and upon the extent of courageous leadership available. This leadership must be willing to experiment with new techniques in the field of human relations just as management in the business world is seeking to find better ways to handle personnel problems. And we cannot overlook the importance of the physical plant. It must be planned in keeping with the objectives of each institution.

Progress in prison construction has fallen far behind progress in other fields. This is pointed out very well in a recent book on prison design and construction.[4] The tendency has been to build fortresses, bastilles similar to the ones constructed more than a century and a half ago. Consequently, in spite of any advances in philosophy concerning the treatment of criminal offenders, no suitable physical surroundings have been provided to make advances in treatment possible. Most prisons have been built primarily for the purposes of keeping the prisoners securely and preventing their escape, without regard to rehabilitative functions.

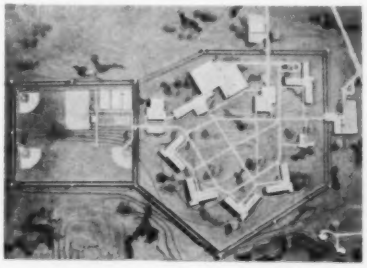
Now that prison administrators are on the defensive, the whole philosophy of prison design and construction and prison programs must be re-examined. We may as well face the fact that there are three choices facing us. In the first place, we may choose to patch up our outmoded, inefficient plants and continue the battle of wits with the unfortunates incarcerated in them; or, second, we may build new, clean, livable, fireproof, sanitary fortresses and frankly admit we are doing no more than holding prisoners for their stated terms; or, third, we may decide to discard all the things that time has proved unsuccessful and set up real rehabilitation programs in a physical setting that will make these programs possible. Let us first re-examine briefly our prison philosophy.

Prison administrators have, through the years, been operating upon the theory that two distinct obligations are placed upon them by society. First of all, it is expected that prisons will safely keep prisoners until they are legally released; secondly, the public expects improvement on the part of the prisoner while he is undergoing confinement. The prisons have done a fairly good job as far as the first objective is concerned. In spite of many claims to the contrary, however, most prisons have been woefully weak in successful rehabilitation. Too many prisons have been used as instruments for punishment, some of it even cruel and inhuman. There has been entirely too much lip service given to rehabilitation programs rather than to sincere efforts to put such programs into practice. Too many wardens, subordinates, and prison employees have not been, by their personality and prior training, qualified to help solve human behavior problems. Too many persons enter prison work because it gives them the opportunity to exercise authority over others. Some wardens have believed sincerely that they were doing a good job and have advertised it as such to the public, when actually they have missed the boat entirely. Some who know better do not have the courage to do what they know should be done because they do not wish to face possible failure and ultimate adverse publicity and criticism. It would appear that, although the dual objective, safekeeping and rehabilitation, is still valid, if the latter half of the objective is to be carried out, new approaches and motivations are going to be necessary.

A few years ago, the Director of Prisons of Finland spent approximately six months studying federal and state prisons in the United States. After he had returned to his country, he made a report to his government in which there was a very significant statement. He said that in his own country a prisoner was considered to be a fallen brother and that it is the obligation of the State or Brotherhood to restore the prisoner to the Brotherhood, but he found that in America the prisoner is regarded as an enemy of society, a veritable outlaw.

To an extent this observation is true. There is a very real, oftentimes wide gulf between the prisoner and the prison keeper. So long as this gulf exists, rehabilitation cannot be expected. The time has come when we must recognize that men and women committed to prisons are people, and that they are representative of the community from which they come. Prisons are not a group of odd, queer, strange, animal-like creatures. Instead, you will find an average state prison to contain a fair sample of the state's population. This is true with respect to intelligence and educational levels, to the type of home background, marital status, race, religion, prior trade, professional training, etc.

For the most part, these people are normal. Many are in prison because of economic reasons, because they committed an offense in a moment of passion, or because they were misled or forced into some unfavorable circumstance. Many are there just because they failed to adjust to some of the complexities of normal living. It has been said that there are actually more law violators outside prison than inside prison. Surely, the prison administrator must realize these facts, and further realize that prisoners will react to incentives and to humane treatment just as people outside prison react. It has also been proved that no more than fifteen to twenty per cent of prisoners need close supervision from a security standpoint. Many prisoners are merely emotionally disturbed and need understanding. Some are financially insecure and are disturbed over the welfare of their families and loved ones. Of course,



Two other state institutions now under way: above, Connecticut State Prison, Enfield, Conn., Sherwood, Mills & Smith, Archts.; below, medium security institution, Ionia, Mich., J. & G. Daverman Co., Archts.

Dormitory units, Louisiana State Penitentiary

4. New Handbook of Correctional Institute Design and Construction. *R. D. Barnes, 1949. U.S. Bur. Prisons. $7.50*

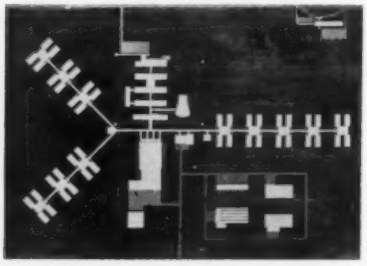
some prisoners are mentally or emotionally unbalanced to the point where they need restraint, close observation and segregation from the remainder of the population.

Furthermore, it is found that people will not be rehabilitated unless they realize they need it and have the desire for it. Many prisoners rationalize their wrongdoings to the point that they feel they have done no wrong, or feel that they have done no worse than anyone else they know. Even those who are will-

Model photo, Frank Lotz Miller, all others, Ulric Meisel

ing to recognize their weaknesses and failures are not always ready to do something about correcting them. Again, they are not always so sure that they wish to be corrected by people paid to correct them in an authoritarian setting. This makes prison work very difficult, and it is here that the real challenge comes and calls for the highest type of leadership ability. And *leadership* rather than *drivership* must be used. The prison administrator must have a staff of personnel who will screen the institution's population, properly classify it as to degree of suitability for

Above, double dining hall, Louisiana State Penitentiary, Angola, La. Below, model



treatment, and provide a program to meet these needs.

Every program for rehabilitation must have the complete support and total participation of all personnel from the lowest-paid guard to the top administrator. The personnel must, in addition, have sufficient training and the right kind of background; and *every* employee must be sold on the program and have complete confidence in its integrity.

It is just as important that the inmate population also be sold on the program and participate in it. It is important that the inmates actually participate in the planning of the program. A wise warden will use an ad-

Above, Administration Building, Louisiana State Penitentiary; below, Post Office

visory council selected by the inmates as their representatives, and other committees, in planning and carrying out inmate programs, particularly for their spare-time activities.

In view of the fact that the average prison environment is an abnormal one anyway, a program will not succeed unless community, public, and private agencies support it and participate in it. Such organizations as Alcoholics Anonymous, Toast Masters Club, and various other service organizations willing to conduct forums or study groups and to promote athletic events and other types of competition, play a tremendous part in the matter of helping prisoners make social adjustments, learn fair play and accept responsibilities.

And, of course, as far as the prison program itself is concerned, it is basic that all prisoners be assigned to work. This work should be both beneficial to the institution and rewarding and challenging to the prisoners. Training opportunities should be available to all who are unskilled, and a well directed, supervised, constructive leisure-time activity program is a must. It is during periods of idleness that individuals stagnate, deteriorate and degenerate.

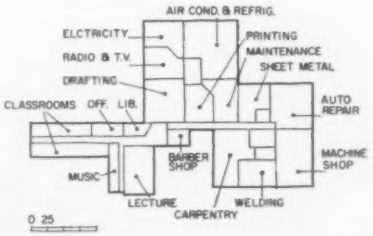
For a program to be successful, the institution must operate with as few rules and regulations as possible. Nothing will discourage improvement more than anything humiliating or degrading imposed upon prisoners, particularly by people who consider themselves to be spiritually and morally superior to the inmates. Nobody can pick a "phony" more quickly than a prisoner. Drastic regimentation is inconsistent with a program to train people to become self-reliant, self-confident and emotionally stable. This type of regimentation cannot be absent from a traditional fortress type of prison, which brings us to a consideration of the physical plant.

The institution known as Louisiana State Penitentiary has consisted of a series of worn-out, unsanitary, overcrowded, firetrap barracks buildings known as camps. There were eight of them housing approximately 2900 prisoners, situated on a large Mississippi River delta plantation, comprising 18,000 acres which cover an area of approximately 30 square miles. These camps are being replaced by a central penitentiary housing approximately 2400 men; a new youthful offenders institution housing approximately 450, located at a separate site; and a separate women's institution for approximately 150, located on the plantation but some four or five miles from the penitentiary. Negotiations are under way to join with neighboring states to build a regional institution. If this project goes through, the women's unit at Angola will be converted into a pre-release unit or honor camp for the penitentiary.

It would have been better to build three separate men's institutions for the penitentiary population: one for approximately 350 male prisoners who need close or maximum supervision, one for approximately 1000 men who need medium supervision, and another for approximately 1000 men who need the open, minimum-custody institution. Due to lack of sufficient capital, it was decided to combine the three institutions into one unit under one central supervision with one feeding facility, heating plant, laundry etc. However, the housing for the prisoners is divided into three separate units and the minimum-custody prisoners eat in a separate dining room from those requiring close supervision.

Four dormitory buildings, each containing four separate, independent dormitories housing approximately 60 men, are provided to house approximately 1000 medium-custody men within the wire fence enclosure. Four other dormitories of similar character and capacity are provided outside this enclosure for minimum-custody prisoners. Space is provided for future expansion in each of these units. The dining rooms and kitchen are within a double wire fence enclosure.

Two two-story cell block buildings, each housing 120 men, are under construction, and space is left for a third



Michigan's medium security correctional institution will also contain a school and shops; schematic plan above

such building in the future. This unit will house the men needing maximum supervision. In the hospital and receiving building already existing at the penitentiary approximately a mile and a half from the new institution, 100 similar single cells are provided.

Also in the enclosure for the two new cell blocks is the two-story control and training center building which will house the academic school, library, associate warden's office, record room, control center, and offices for the classification personnel who contact the men daily. In front of the close-custody unit is a small building serving as a visiting room for the prisoners and a lounge for the correctional officer personnel. A small, completely air conditioned, one-story administration building is located at the approach to the new institution. In it are housed the warden's office, business offices, post office, a conference and training room, interview rooms for visiting attorneys, etc.

To the rear of the kitchen will be a new cannery, and also at the rear of the medium-custody dormitory buildings will be industrial shops including the metal shop, mattress factory and garment factory.

Outside the institution at already existing locations are the sugar mill, a modern meat packing plant, soap factory, farm implement repair shops, automotive repair shops, and other maintenance repair shops in which the minimum-custody prisoners will work. They will also be employed in operating the tremendous farm and livestock facilities. For the most part, the men housed in the buildings inside the enclosure will work in the industrial shops, kitchen and dining rooms, laundry and other facilities within the enclosure.

Ulric Meise

As far as construction is concerned, almost all the buildings are one-story and consist of roof and floor slabs of a light-aggregate concrete lifted into place and supported by metal columns filled with concrete — the lift-slab system. The walls, partially of concrete block, are for the most part metal detention windows, which provide ample cross ventilation and very adequate natural light. The roof overhangs approximately four feet entirely around the buildings, and not only protects them from rain in this very damp climate but also permits leaving the windows open for ventilation nearly all year. It also provides opportunity for security personnel to supervise the men in the small dormitories.

At the present time the interiors of the dormitories are open, but in the future they can be converted into squad rooms, cubicles or individual rooms by the addition of partitions. No walls will be load-bearing.

All buildings are connected with wide covered walks that provide shelter from inclement weather as men move to and from the various facilities. All floors have been raised three feet above the ground, and the under-floor area will be walled in (with plenty of ventilation) to protect the heat ducts and other utility lines anchored underneath the floors of the buildings and the walks. Two large dining rooms have arched roofs; the supporting columns were eliminated so the dining rooms can be used for other purposes such as exhibiting movies and putting on programs for the entire group pending the building of an adequate auditorium.

The architecture is contemporary, a drastic departure from the traditional fortress prison. At first glance, the average citizen would probably think the buildings very insecure from the standpoint of escape-risk. It must be recognized, however, that the main security feature of any prison is an alert, well trained personnel. The strongest sort of fortress is not safe from escapes if the prisoners are permitted to smuggle in firearms, hacksaw blades, cutting torches, or any other type of equipment that could be used to bridge the security features.

At Angola, dependence is placed on the alertness of all personnel, particularly those manning the guard towers outside the ten-foot-high security fences. The absence of very obvious security walls, gates, etc., adds more to a proper climate for rehabilitation than it detracts from a security program.

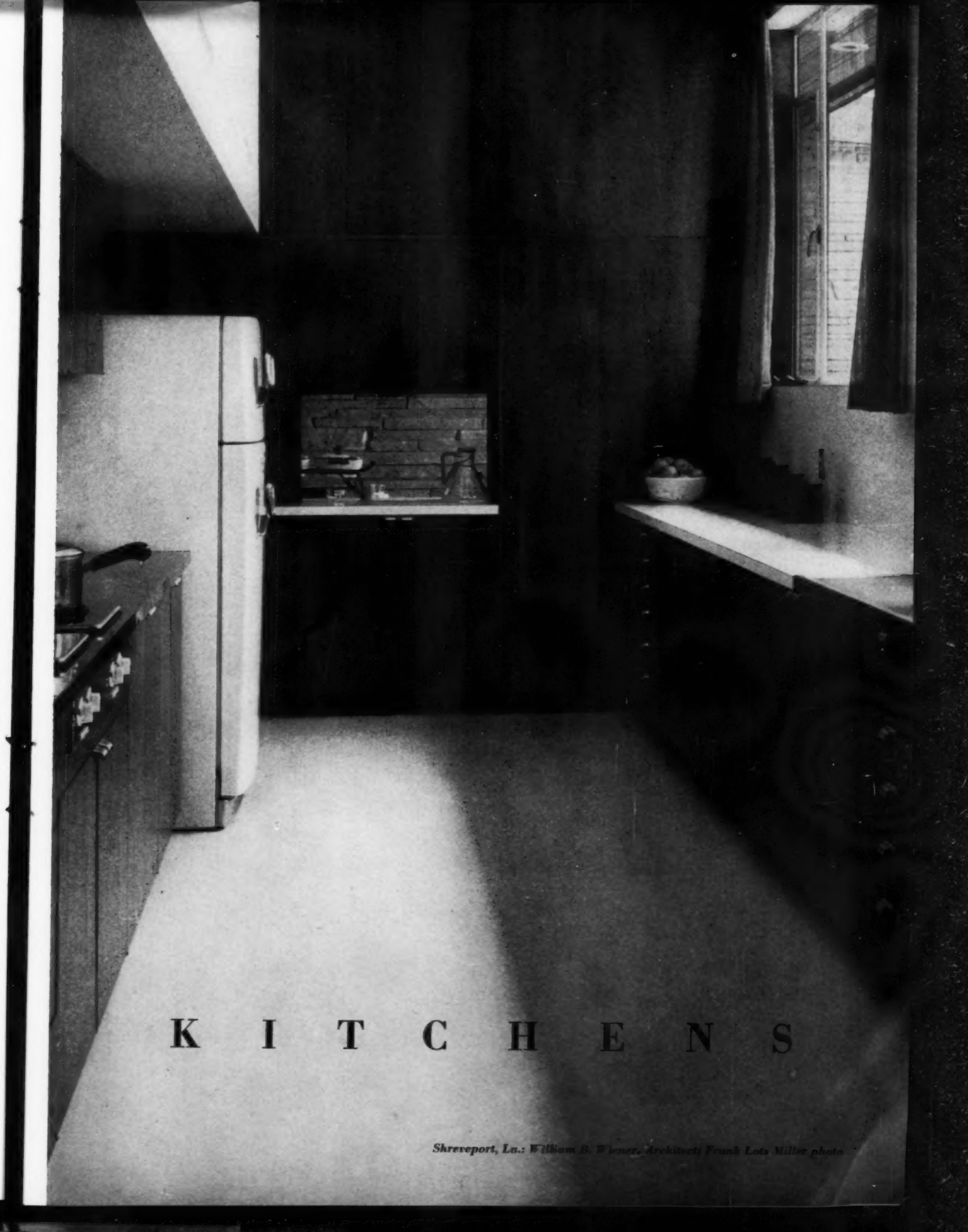
Inexpensive materials are used in the construction, and the lift slab method of construction was chosen because it lends itself well to the use of unskilled prison labor. A substantial part of this prison is being built by prisoners. The over-all cost will be less than $4000 per man as compared with the ordinary $8000 to $12,000 per man in the traditional type of prison. The buildings will be easily maintained. Since all utilities are underneath the buildings, without the necessity for tunnels or trenches, they are easily available for maintenance. The appearance of the buildings is not forbidding; there are no dark, dirty corners. The quarters are livable; the buildings are spaced widely apart and will not be overcrowded.

A tremendous recreational area is provided for each unit. Added to the present housing and feeding facilities will eventually be hobby shops, chapels and other facilities that will be used in the total treatment program.

It is believed that the design of this institution is unique. It is also believed that it is in keeping with the terrain and the climatic conditions of the area in which it is located, and that it will adapt itself well to the total over-all treatment program planned for the institution.

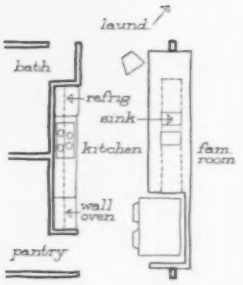
The present penitentiary was described in a magazine article a few years ago as America's worst prison. It is to be hoped that when the new program is well under way, Angola will be regarded as one of the best in the country. It must not be overlooked, also, that another institution of a similar type for the younger, lesser offenders is being constructed at another locality and that the women prisoners will also be adequately cared for under a separate program.

Cellblocks: photo at left, for maximum security prisoners, Louisiana State Penitentiary; below, interior and exercise yard, Connecticut State Prison



K I T C H E N S

Shreveport, La.: William B. Wiener, Architect; Frank Lotz Miller photo



Mt. Airy, N. C.

Cecil D. Elliot
Architect

Joseph W. Molitor photos

K I T C H E N S

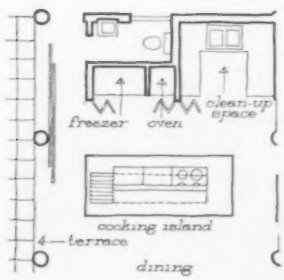
Palm Island, Fla.

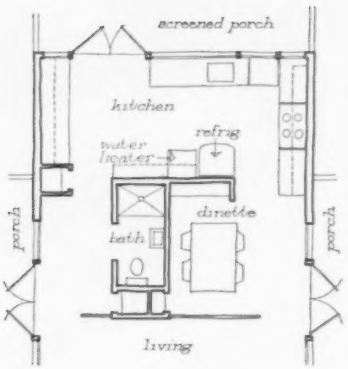
Rufus Nims

Robert B. Browne

Associated Architects

© *Ezra Stoller photos*





Bradenton, Fla.

Paul Rudolph
Architect

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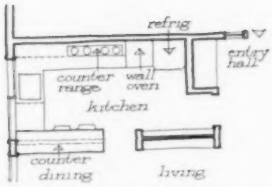
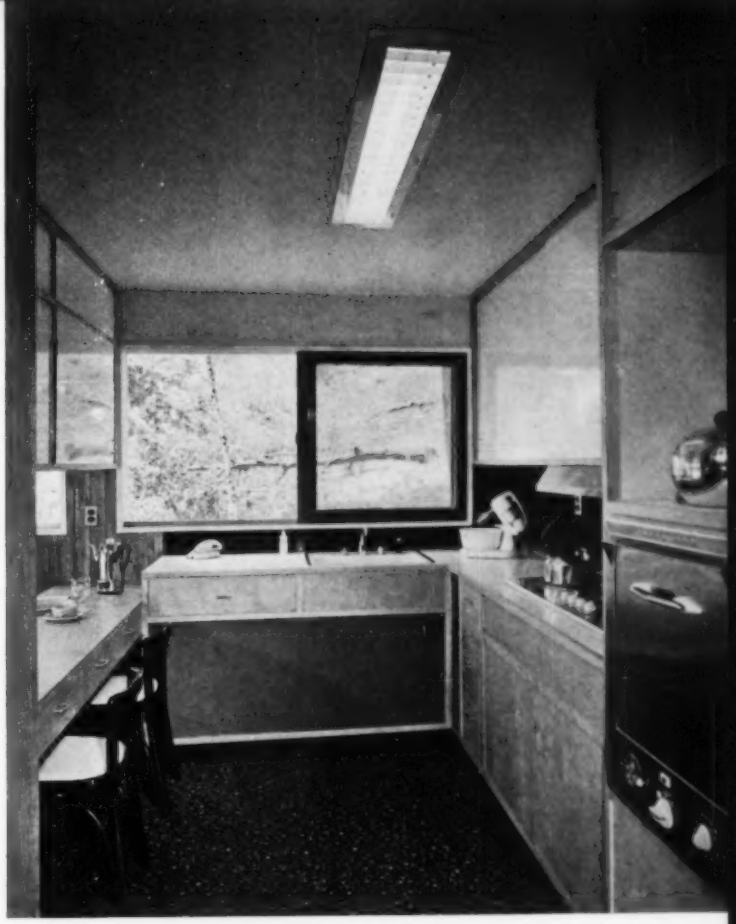
K I T C H E N S

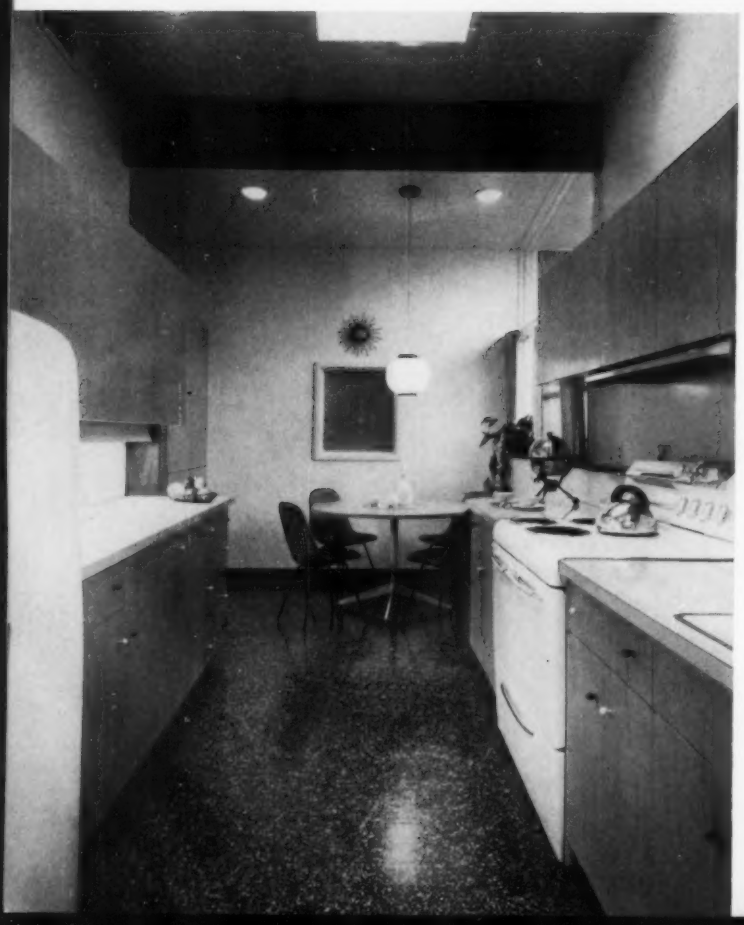
Sherman, Conn.

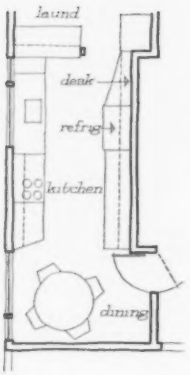
Herbert Beckhard
William W. Landsberg
Architects

Joseph W. Molitor photos









Maplewood, N. J.

Kramer and Kramer
Architects

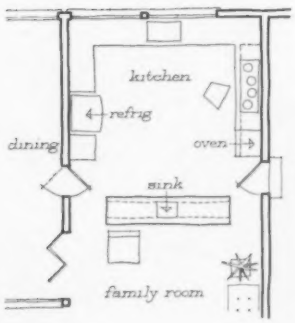
Lionel Freedman photos

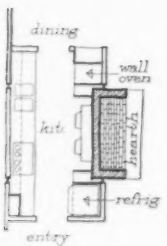
K I T C H E N S

San Francisco, Calif.

Anshen & Allen
Architects

Rondal Partridge photos





West Los Angeles, Calif.

Craig Ellwood
Designer

Marvin Rand photos

K I T C H E N S

BUCKMINSTER FULLER and the Brooklyn Dodgers made headlines last Fall with the announcement that the expert in light-weight domes had been retained to develop the world's largest clear span roof for the world championship team's projected new stadium.

Bucky completed the initial study of a 750-ft. dome during a period as visiting critic to Princeton graduate architectural students who developed and constructed a 6-ft model under his direction.

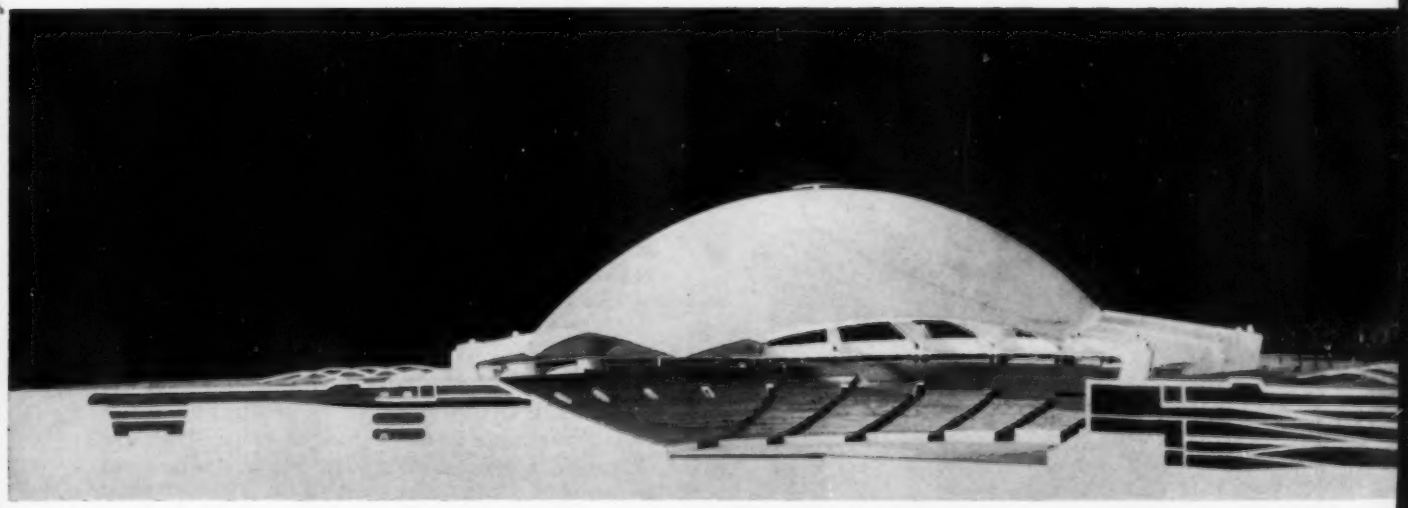
While Dodger president Walter O'Malley studied the problem of site acquisition with City officials and Bucky continued detailed investigation of materials and performance, one of the Princeton group — Theodore W. Kleinsasser — with the guidance of Jean Labatut, pursued the problem of integrating the dome into an overall proposal for seating, circulation, traffic, parking, rapid transit, and the redevelopment of areas adjacent to the site.

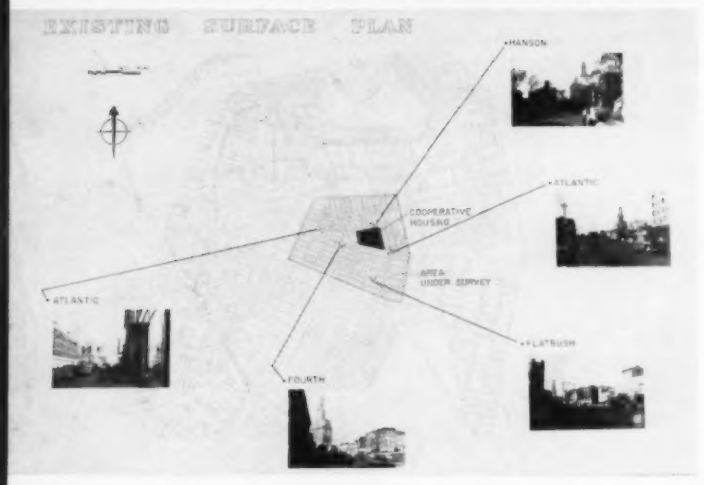
This scheme was recently presented to a Master's degree jury, whose members included Paul Frankl, Buckminster Fuller, Kenneth Kassler, Jean Labatut, John C. B. Moore, Walter O'Malley, Robert Oppenheimer, Emil Praeger, Robert Le Ricolais, John Knox Shear, Canon Edward West. In the Princeton tradition, the non-architects were on the jury in the role of "potential clients" for the several projects presented on the occasion.

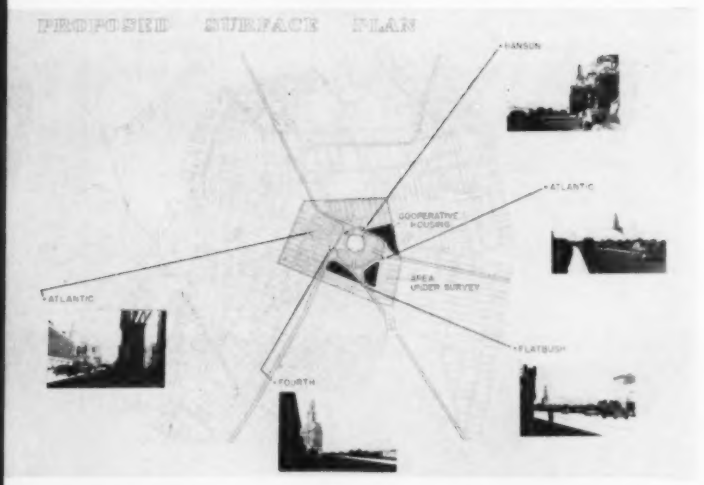
In each case, the degree candidate was queried by the jury following his oral and graphic presentation.

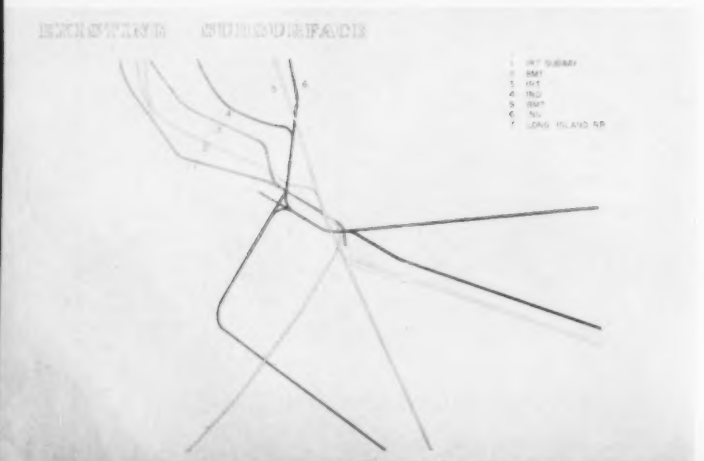
After explaining that his interest in the Dodger Stadium grew out of his interest in the "joint" and its articulation in architectural and planning problems, Kleinsasser's presentation developed in this way:

DODGER DOME GENERATES CITY CENTER PROPOSAL









MR. KLEINSASSER: Because of lack of parking space, the Dodgers are losing money . . . they also lose money because they do not have a covered stadium. The only structure known to man at this time that will span such a space feasibly is the dome of Mr. Fuller.

Also in Brooklyn, the Long Island Railroad is confronted with the problem of having brand new equipment and a station too small to take care of it. There must be adequate facilities for parking with adequate access and egress . . . which involves traffic. This is a concern not only of the Dodgers but of Brooklyn as a whole. Mr. Cashmore, the Borough President, has allotted this site to be surveyed.

There is also the problem of housing in this particular area . . . all of it is obsolescent and some of it is definitely of the slum variety.

▪ ▪ ▪

I am concerned with this site, at the intersection of Atlantic, Flatbush and Fourth Avenues . . . it is the hub of many arteries of travel. There are seven subway stops within two blocks of this site and four highways cross exactly at this corner, each going to major areas. It is also the center with respect to four airports as well as the Long Island R.R. terminal. And it is the site for Mr. Robert Moses' cooperative housing project.

MR. O'MALLEY: Excuse me. Mr. Moses had selected that site, which is also the site we had in mind for the stadium, as a place to build a cooperative housing project. . . . I think he realizes that the serious interest in the Railroad station and the market area and the traffic problem and the baseball park is such that he will very likely find another site.

▪ ▪ ▪

MR. KLEINSASSER: In my proposed surface plan, traffic is changed so that there is no longer a collision at this corner, but a constant flow around, with tangential highways leading off. I have not changed any highways . . . I've simply made a large traffic circle . . . The whole area is well within Mr. Cashmore's allotted area . . . My proposed cooperative housing would be around the stadium rather than congested in one spot.

In the existing sub-surface plan the IRT line, the BMT line and the Independent line all have stations on the same corner and there are four more stations in the immediate vicinity. I have not changed the plan or the depths of any subway . . . I have linked the scheme to the subways as they are now.

▪ ▪ ▪

The surface plan involves a parking arrangement which could be utilized by other business establishments in this vicinity and has a park-like nature. I have arranged the parking so that the progression is to drive around the one-way circle, pass by each parking lot, look in, and turn in and go either there or there, to the areas of parking. As speed changes, fast here, slow here, the size of the roads and the size of the curves change also. Pedestrian approaches are all down these arteries from the triangles on the four major streets. There are pedestrian bridges there so that no one need cross traffic.

In the subsurface plan, the concourse includes the BMT subway stop and the Long Island Railroad . . . both of which are connected by tunnels to the other two subways in the immediate vicinity. The underground parking is entered from the circle . . . branches into three lanes, and converges into one lane underground at three levels. Roadways go directly to the parking lots which are on the second level and the third and fourth level. As the ramps go up into the air, clearance under them becomes greater and there is access to the stadium at the vomitory level.

▪ ▪ ▪

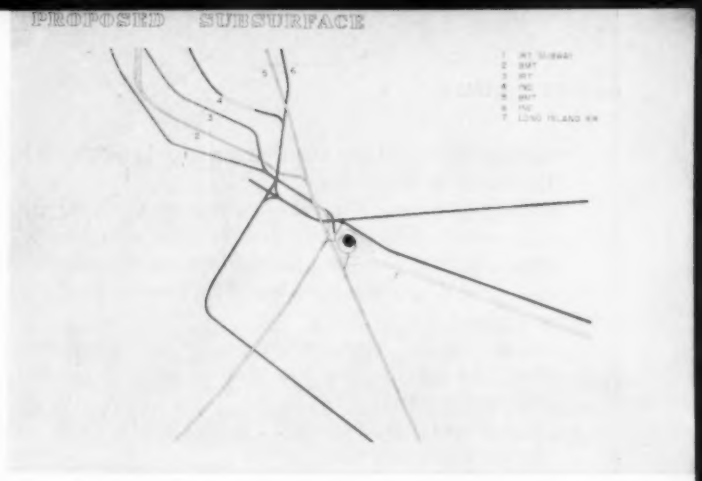
In the plan diagram of the stadium itself one sees the relationships among the five levels. The first level is the level of the vomitories and the outfield section of seats. The second plan segment is the second level, which is also the concourse and railroad level. The third is the ground plan, which includes the grass barrier and to which the pedestrian bridges come from the parking areas. The fourth segment is a reflected, suspended seating box plan. These boxes will be fed by elevators which rise up each structural cantilever. The cantilevers are flat enough so that one can walk up in ramp-like fashion and branch out on either side. The total number of people enclosed in the suspended boxes then will be about 2000 and the grandstand will seat 53,000. The fifth segment is the top view showing the dome and the top of the structural cantilevers supporting the dome.

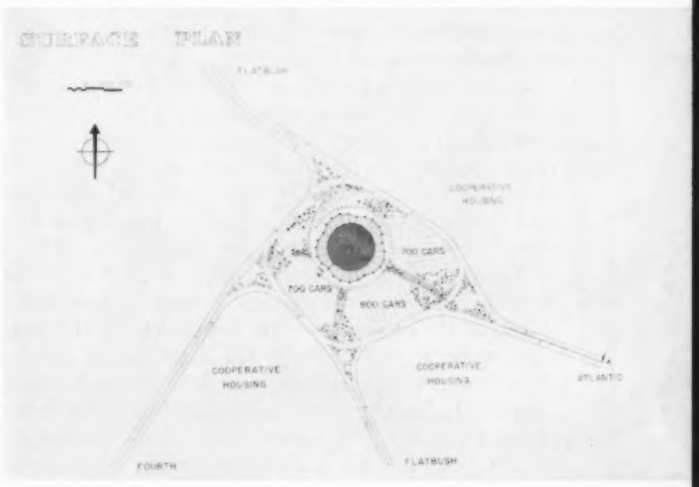
▪ ▪ ▪

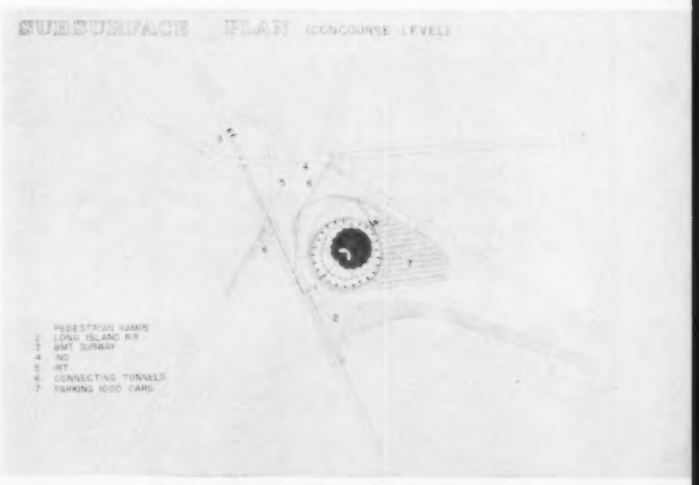
The dome itself weighs approximately 1,000,000 pounds. The diameter is 550 feet from point of support to point of support. The height of the dome from the playing field is 250 feet. The thickness of the dome is approximately eight feet and is comprised of four-foot aluminum struts. The exterior of the dome will be covered with plastic fiber glass and the interior will accommodate inserted triangular plastic panels. The panels will cut down the glare from sunlight and also will be the reflecting surface for artificial illumination, originating along the balcony here and serviceable by means of these elevators and ramps. The light shines up, hits the panels and is reflected down on the field. There is an amusement train that has its beginning at one of these low cantilevers, runs up and across the open top of the dome. I thought that the people who take this ride will really get into the spirit of the dome as they come up to the top, cross the opening, and look straight down 250 feet over second base.

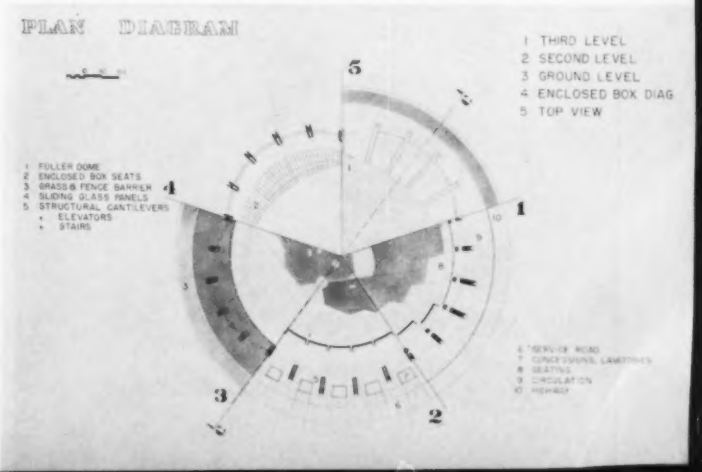
▪ ▪ ▪

MR. O'MALLEY: Concerning this train . . . with this stadium one that has potential use all year-round, it means also that there will be sightseers, and we know that the Empire State Building takes in a million dollars a year just in sightseeing fees. The income from this train during those occasions when games or contests or shows are not taking place would bring in a substantial amount of income which could help to amortize the cost of the roof.









MR. LABATUT: Did you mention the sound absorption by the panels of the dome?

MR. KLEINSASSER: The panels which are to be inserted in a pattern into the tetrahedron dome structure will allow sound to penetrate the thickness of the dome and dissipate. Hence the dome would be a sound deadening area also.

MR. SHEAR: Are you counting on the open-top lantern effect to induce natural flow of air to carry off cigarette and cigar smoke?

MR. KLEINSASSER: Yes, sir . . . I think Mr. Fuller can explain this better than I.

▪ ▪ ▪

MR. FULLER: We discovered that with the dome, when we have openings at the bottom . . . quite wide open . . . during the hot season, when there's heat on the outside of the dome and an opening at the top, that these compound curved surfaces do very extraordinary things with respect to motions and shapes of atmosphere. In this case, the dome itself being of compound curvature, the exterior surface tends to diffuse the radiation of heat. The dome gets so hot that it not only tends to radiate the heat outwardly, but it also heats the air next to it so that the air rises toward the top on the inside of the dome very close to the skin. At the same time there is a tendency in the dome during the hot season to send the still air to make a thermal-column of the atmosphere rising from it so the air being drawn in from the outside of the area of the dome through the openings around the bottom rises again above it. So during the hottest of the summertime, with the sun coming down, they tend to be about 10 per cent cooler on the inside than the outside.

▪ ▪ ▪

MR. LABATUT: Mr. Kleinsasser, can you speak of the horizontal openings you have around . . .

MR. KLEINSASSER: Yes. I thought of this project when I started as being a very difficult problem of integrating this dome, which is a very rational and fixed thing, into the scheme as a whole. I found, since I had to have a system of suspended box seats, that I could integrate those box seats with a supporting system for the dome. As the accommodation of another force, pedestrian flow, I raised the first suspended box seat level up high enough so that people could come directly in from the street on all sides.

MR. MOORE: Could you explain the reason for the variable length of the cantilevers in this five-foil arrangement?

MR. KLEINSASSER: I tried keeping the cantilevers in a constant circle and the formulation of the levels become so complicated and irregular that I thought this better.

▪ ▪ ▪

MR. LABATUT: Will you explain the green wall in the outfield?

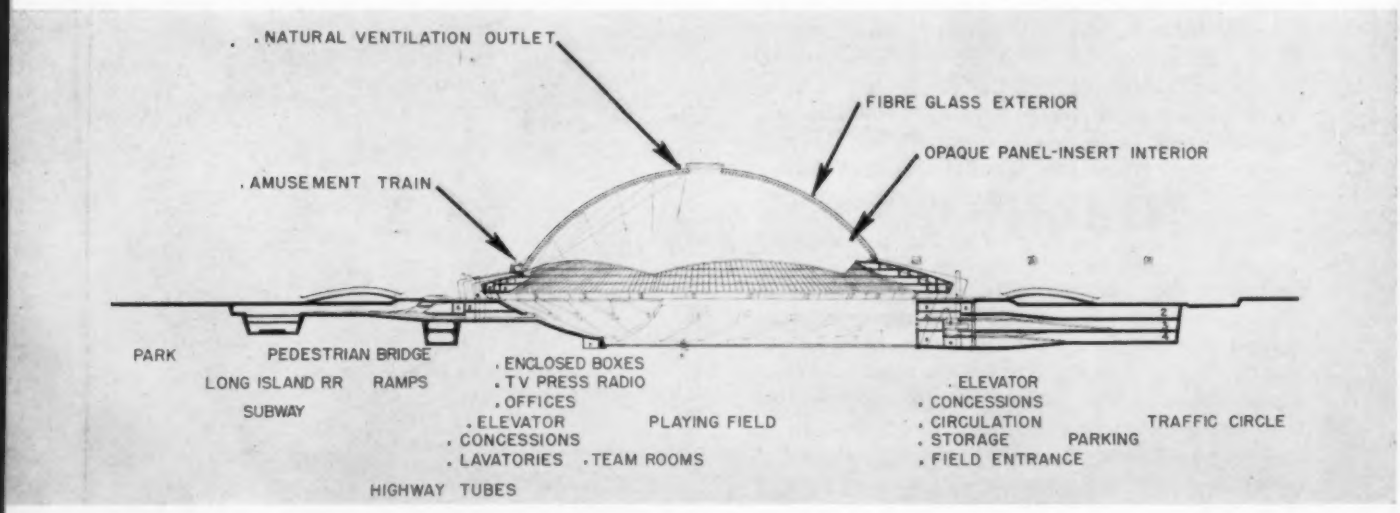
MR. KLEINSASSER: This green wall is against the opening leading to the parking areas . . . which makes it possible for circuses to park here and come right into the stadium. Around the wall there will be space for advertising which pays a lot of bills. Rather than to allow slapdash, disorganized advertising, I chose to make this wall of aluminum tubing so it could house an electronically controlled advertising device: a controller up in one of the suspended boxes could push buttons and cause signs to flop down.

▪ ▪ ▪

DR. OPPENHEIMER: I have a question. Can one take the intersection of four main highways and put a traffic circle there and use that circle as a way of getting traffic into a stadium? Ought there not be a separate highway system?

MR. KLEINSASSER: That very consideration has led me to provide this long straight stretch before each entrance, the size of which generates the traffic circle as a whole. I feel that this straight stretch is long enough for moving cars to change lanes so that they can leave the circle . . . there is parking for 5,000 cars.

MR. FULLER: When's the opening game?



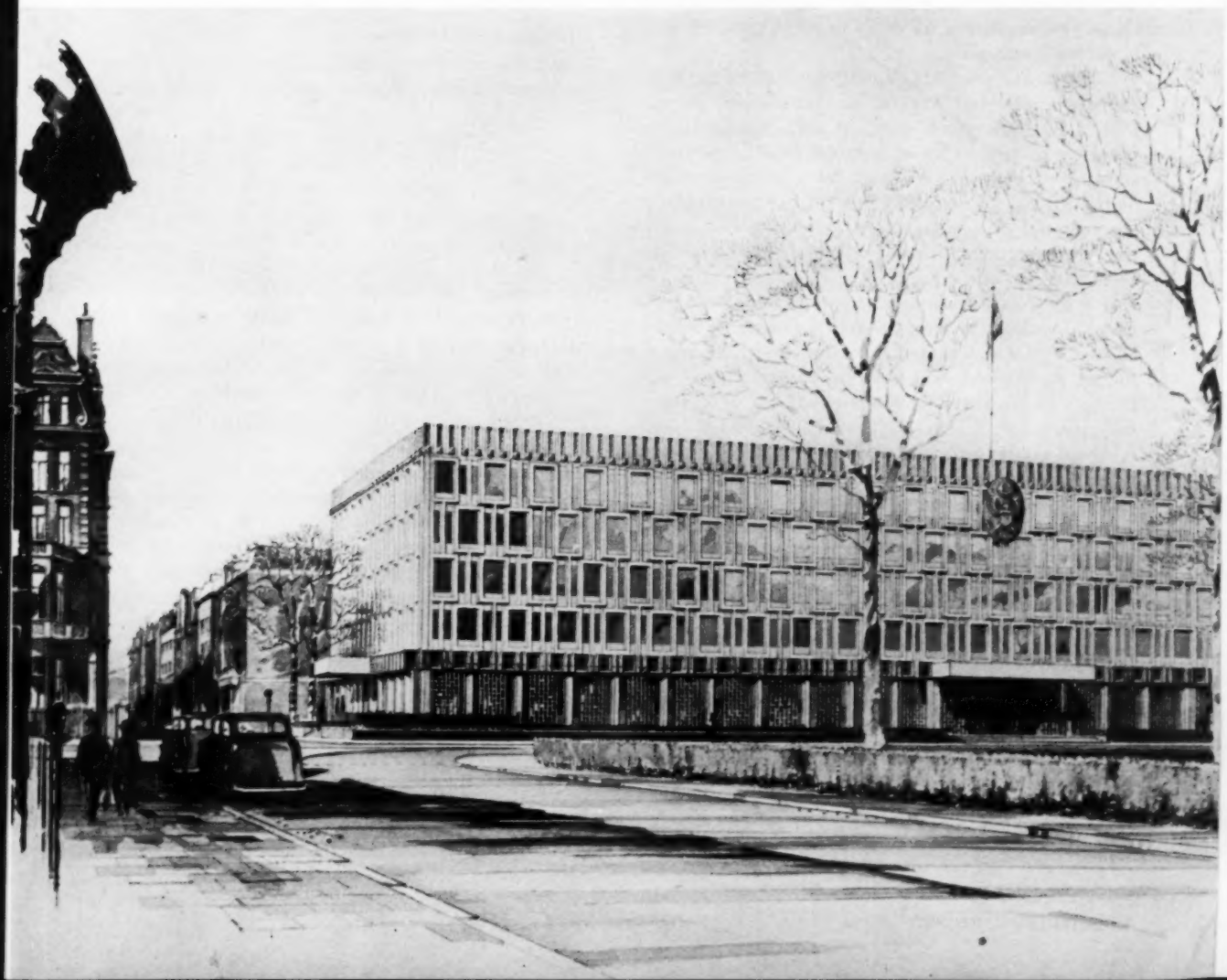
COMPETITION FOR U. S. CHANCERY BUILDING, LONDON

FOR THE DESIGN of the most important single project in its current foreign buildings program (AR, May 1955, pages 187–192), the State Department chose the most punctilious and time-honored method of selecting an architect for a great public project. With the concurrence of its distinguished advisory panel of private architects — Pietro Belluschi, Henry Shepley and Ralph Walker — it invited eight leading American architects to participate in a limited competition. Duration of the competition, which had the approval of the Committee on Competitions of the American Institute of Architects, was three months; each competitor was paid a fee of $4000 for a design, to cover in addition his expenses for a mandatory visit to the site. As professional adviser for the competition, the State Department appointed Professor Robert W. McLaughlin, head of the School of Architecture at Princeton University. The jury was comprised of the three members of the architectural advisory panel listed above, plus George Bain Cun president of the American Institute of Architects, an representatives of the State Department — Loy W. Hen Deputy Under Secretary of State; William P. Hughes, I of Foreign Buildings; and Livingston T. Merchant, A Secretary of State.

The ten-page program emphasized relationship to e ment — a historic site on the west side of Grosvenor Sq London's Mayfair section — but specifically added: does not mean copying anything." It also stated: "This ing should represent the United States at this time." noted that a minimum of detailed planning of internal was required "to permit maximum study of the for character of the American Embassy in London."

The eight designs submitted are shown in rendering and the following pages.

PULL OUT



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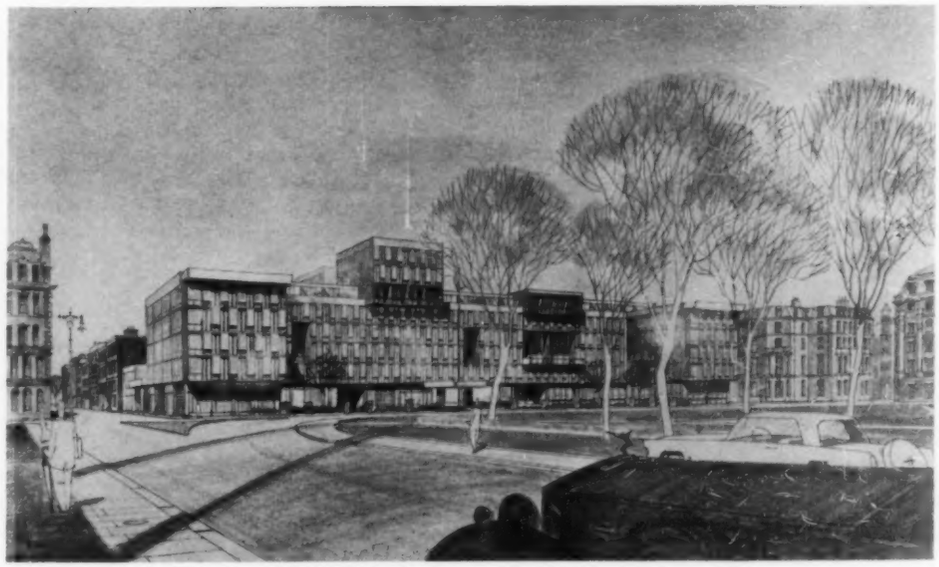
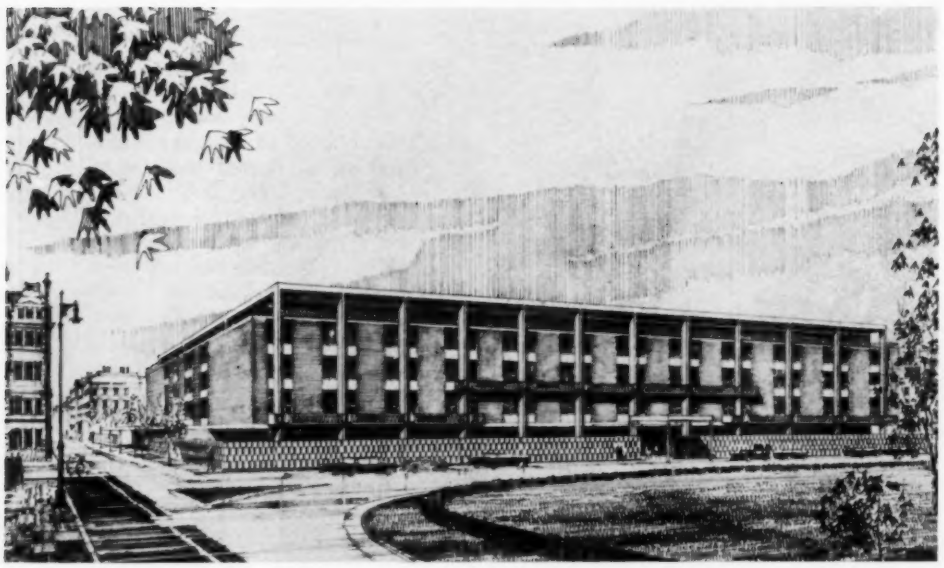
EERO SAARINEN is the winner. His competition design features a great stone grille whose perforations repeat the rhythm of window spacing on surrounding buildings; above ground floor level, the pattern of the façade comes from the structure, an English system of precast columns which involves coupling two columns and casting them together for ease of erection. The major material is Portland stone, used in all London's "official" buildings and noted for its dramatic black-and-white weathering qualities; the cornice is black bronze. *The Times* of London thought the design should be a "welcome acquisition" to the area. Noting the difficulty and importance of harmonizing with the existing façades (neo-Georgian product of rebuilding during the last 20 or 30 years) to preserve the unity of the Square, *The Times* said: "This Mr. Saarinen appears to have done conscientiously, without detriment to the freshness of his own design, regarded as an architectural composition in its own right. His building is strictly symmetrical, thereby retaining the traditional formality of the London Square, but he has not created too strong a cross-axis, so that the continuity of the Grosvenor Square façade will not be interrupted as it would be by a highly centralized design."

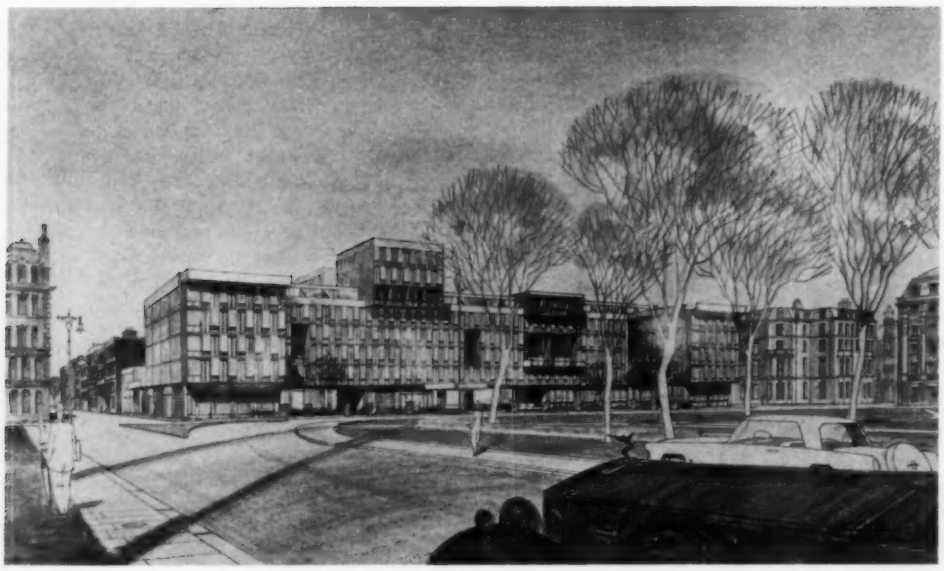


EERO SAARINEN is the winner. His competition design features a great stone grille whose perforations repeat the rhythm of window spacing on surrounding buildings; above ground floor level, the pattern of the façade comes from the structure, an English system of precast columns which involves coupling two columns and casting them together for ease of erection. The major material is Portland stone, used in all London's "official" buildings and noted for its dramatic black-and-white weathering qualities; the cornice is black bronze. *The Times* of London thought the design should be a "welcome acquisition" to the area. Noting the difficulty and importance of harmonizing with the existing façades (neo-Georgian product of rebuilding during the last 20 or 30 years) to preserve the unity of the Square, *The Times* said: "This Mr. Saarinen appears to have done conscientiously, without detriment to the freshness of his own design, regarded as an architectural composition in its own right. His building is strictly symmetrical, thereby retaining the traditional formality of the London Square, but he has not created too strong a cross-axis, so that the continuity of the Grosvenor Square façade will not be interrupted as it would be by a highly centralized design."

ANDERSON & BECKWITH — "Obviously the choice and arrangement of windows was of critical importance in making such a large building seem to belong here. . . . Vigorous shape definition or abrupt contrasts of materials are needed to escape drabness" in London's feeble winter daylight; thus Portland stone, for its black and white weathering qualities. "The heavy oval of trees in the park makes it impossible to see the façade from a distance except as filtered by the trees. Traffic moves around the Square and develops foreshortened views of the façades. We were led to avoid emphasis on a central motif and to think in terms of an uninterrupted fabric. . . ."



ERNEST J. KUMP — With a parti chosen to "complete" the Square by enclosing the entire site, this scheme sought harmony with existing façades in matters of architectural strata, horizontal profile, color and texture. The pierced stone screen around the building and the recessed walls of the ground floor were a response to the rather heavily modeled masonry ground floors of the older buildings; the setback top story attempted to recognize without copying the surrounding mansard roofs. The vertical pattern of the façade facing the Square, visually reinforcing the ribbons of structural columns, was for deliberate contrast. As an American building, the design "says the U. S. has reached a maturity as a world power that lets it be itself without shouting, recognize and join hands with its setting"

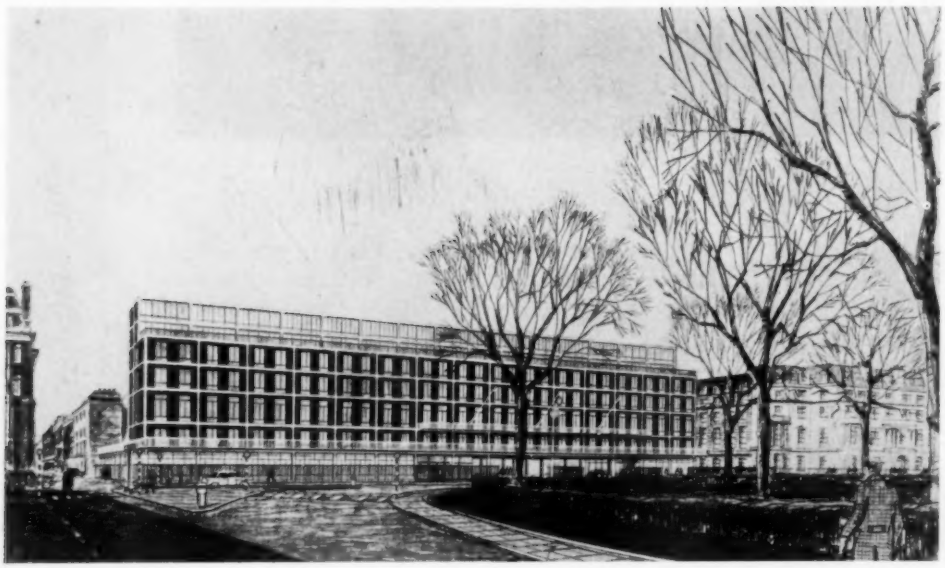


JOSÉ LUIS SERT — The spatial rather than the façade relationship of the new with the old buildings around the Square was the key consideration in the development of this design, seen first of all as an enclosure unifying the space around the square. So the scheme is slightly U-shaped, and the two end wings are advanced to emphasize the street entrances. Use of "a double square as a system of proportions" established the pattern of the façade; the shape "recalls Georgian windows in proportion." Its contemporary building character was thought to give it its representative American quality

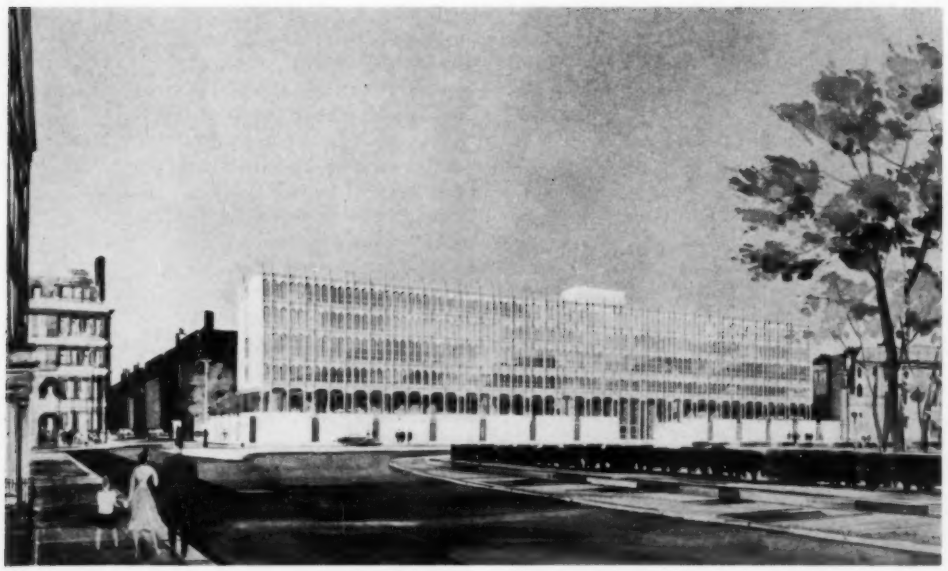
PULL OUT

EDWARD D. STONE — "In deciding on the character of the exterior, we chose the simplest form of expression, with the structural columns reflected on the exterior in order to have column space uninterrupted by column projections. . . . Most of the London squares, including Grosvenor Square, are combinations of brick and limestone buildings — limestone we deemed more appropriate. . . . The iron balconies were a unifying note in that all buildings on the Square had used ironwork in some form or another. The resulting exterior of the building would perhaps resemble, in a way, the office buildings of Sullivan with the columns expressing great horizontal plans terminating the entire building. It is not dissimilar either to the Italian palazzo in fundamental and with the characteristic loggia at top"

HUGH STUBBINS — "The size and proportion of the Square, with its narrow entrances, has a rightness about it which in the end, we felt, should not be tampered with. . . . The view through the arcade, under the building into the court, leaves no doubt as to the 'U' shape of the superstructure. . . . The expression of the façade was the most difficult part of the problem. . . . We tried what we think is a new concept of fenestration — one that permits flexibility of office partition arrangement and at the same time produces a contrapuntal rhythm in the pattern of materials. . . . We felt that the building should be expressive of the latest American construction techniques, hence the modular system of the elevation. . . . *It should not be unduly self-assertive. . . .*"



WILLIAM W. WURSTER — "The environment does and should rule it. . . ," suggesting that, for a residential square of luxury flats, the Chancery should not seem "too brutally" a business building; that it ought to line up with existing buildings in height; that, without copying the old mansards, a setback could acknowledge them; that, "the Square being very beautiful," the more offices on it the better, and so the height on the Square is seven stories; that, in keeping with the character of London as a city of extreme contrasts, it should be "a violent building" — thus the black-and-white contrast of black brick and Portland stone. But — here as always — "architecture is not a goal; architecture is for life and for pleasure and for work and for people . . . the picture frame and not the picture"



MINORU YAMASAKI — The key to this solution was the decision that a "façade job" was not the answer. The design recognizes the site by filling it in to complete the Square, and existence of other buildings in the matter of height; otherwise, the effort was to achieve an "exciting form" for a building it was felt should be "dominant" rather than diffident in its relationship to the Square. Expression of the steel structure and triangular space frame was thought to represent the ultimate of technology in today's thinking about structure, and to be therefore "compatible with U. S. supremacy in technology." Above all was the intent to produce "no ordinary office building" but the "cathedral of the square"

TODAY the new Chancery Building for the American Embassy in London exists only in preliminary drawings and in the mind of its architect. This makes its evaluation difficult, though the importance of the building suggests that it should and will be discussed. The black-and-white reproductions leave us ignorant in matters of color, and to a large degree of texture, in both the winning design and the seven other entries. In certain instances, though not in the case of the winner, somewhat inadequate renderings furnish us with less sense of the developed forms and spaces than is normal even in this necessarily limited medium.

Constructive appraisals, even of completed buildings, are not easily achieved. Preliminary ideas are particularly elusive and ordinarily not susceptible to more than the cursory kind of criticism which is inclined to give the architect the benefit of the doubt. In these submissions, that benefit is certainly deserved, and probably needed. Though evaluation may be impossible, speculation will be inevitable. Architects and interested citizens across the country are likely, in this competition, to look for indicators of our ability to speak through our buildings. The site, our relations with Britain, the selection by competition and the choice of competitors all serve to focus attention and underline significance.

Eight of our most able architects went to London; visited the site; and, working in a three-month period, from a program which urged major attention to the problems of visual character, developed the proposals shown here. It seems likely that many will be surprised at the results when related either to the standards of the competitors' previous work or to the standard of our expectations. Although the program explicitly ruled out stylistic copies, it was equally definite in asking for the establishment of appropriate visual relationship to the other three sides of the Grosvenor Square site in terms of scale and materials. It asked particularly for an architecture which would engender good will through distinguished architectural quality. This is a big order, even for these talented men, and perhaps it should not be surprising that from what can be read in the drawings, the results seem not to have approached closely these difficult, intangible goals.

Within the program's requirements, many legitimate interpretations were possible. These could have involved widely different total effects growing from a wide range of stimuli: the Square, London, the more subtle associative images evocative of democracy, the face of a friendly people, America's technology, the dignity of relations between great states. While some evidence of these and other themes are seen, no proposal appears to carry through any theme very completely.

It is not easy to characterize these buildings. Several have been organized on the general basis of the kind of subtractive approach which permits nothing in or on the building which is not directly a structural or similarly basic functional part. This is the idiom in which most of these competitors have been accustomed to work. Its success depends on the subtlety and precision with which the spatial and structural systems are unified, and on the kind of clear and sensitive expression which restricted palettes always demand, if either the ordinary or the brutal is to be avoided.

Other proposals, through use of embellishment, have taken an additive approach. Both essential and functionally extraneous building parts are located, or contorted, or exaggerated in an effort to achieve a quality of richness. These, along with the former solutions, have some disquieting aspects. The proposals which sought richness through decorative effects will leave many feeling that they tried too hard. In more than one instance the ornamental devices seem ill at ease — left over from other times and other places. Working in a strange idiom, the authors have gotten strange effects. The enriching elements are seldom developed out of the simple facts of the building.

Some will question the height of the buildings in relation to the Square and its surroundings. Certainly in two or three, the extravagantly restless composition of basic volume will be pointed out. In almost all, a unifying sense of situation and a clear expression of intention seems to be lacking.

But this lack is not peculiar to these buildings alone; the search for means of expression is architecture's biggest challenge in our time. And nowhere is the problem more apparent than in those buildings which must express our highest group aspirations: our churches and our governmental buildings.

These competitors have been given a doubly difficult assignment. Today's architecture, with changing needs and techniques, is still in the process of finding itself; and America, in its new role of world leadership, is evidently unsure. It would be unfair to suggest that either our architects or our country have failed in speaking to the world. In the broad historical view, they have just begun to tackle the problem.

It would be unfair also — to the better proposals — to suggest that distinctions other than the Jury's cannot and will not be made among these several schemes. There are obviously real strengths in some, and none is without virtue. Manifestly, the Jury had a difficult assignment. (One wonders why there was no English representative.) While all will not agree with their verdict, many will agree that none of these submissions will enlarge — and none much diminish — the reputation of these fine architects. In this instance they appear to have achieved generally routine solutions in a situation which seemed to ask for something more.

In any event, the winner is not bound to carry out his present scheme, and the cartouche will surely find a happier home. A good architect has been chosen and seven good architects have not; though neither of these facts is completely evident in these drawings.

John Knox Shear

The Individual School

by Frank G. Lopez, A.I.A.

Ideographs designed and executed by Marjorie Blake

GLANCE THROUGH almost any current American book or article on educational principles and you will find an emphasis placed on the importance of the individual student, on full development of the capabilities of each. It is as if, in this age of mass produced baked beans, babies, Jaguars and gray flannel suits, the herd instinct was being denied, paradoxically at the time of life when the urge to conform grows increasingly strong, the years spent in elementary and secondary schools.

Not to argue the merits of this principle, we know from personal inspection

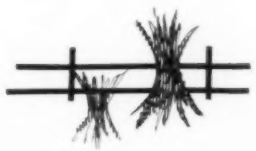
that some schools, among them several of great architectural interest, do so concentrate on the individual. We know also that many schools, beset by huge enrollments, by tradition, by the expanding endlessness of suburbia or the facelessness of the city, find it difficult to concentrate on individuals en masse. Yet the tenet prevails. It has given rise to numerous educational and architectural devices aimed at increasing the stature of the individual. From it derives an architectural urge which may be the reason why so many school buildings have a positive character while in the general run of hospitals, houses, stores or office buildings something often seems lacking. Just as a cup of lunch-counter coffee in Duluth or San Francisco or Miami Beach tastes of the same unwashed muslin coffee bag, so many recent buildings, faced with stainless steel, aluminum, glass, or good old-fashioned brick, have a rather monotonous flavor. The few that do not, we cherish.

Does this mean that to produce good school buildings one must ignore the mass-produced, rationalized building materials and equipment that are widely available? Of course not! We have said as much in a discussion of prefabrication as applied to schools (Feb. 1956, p. 209). We lack the skilled artisans, time and money needed to build entirely by hand. Instead we can select what is appropriate from a variety of framing, walling and roofing components, from many types of heating, lighting and ventilating systems, gaining the benefits of precision manufacture and thus producing better buildings than we used to, for a variety of local needs. Sometimes a new problem arises in designing a school or an old one is freshly attacked, and the manufacturer finds a new product to produce and sell.

Besides educational insistence on the dignity of the individual student, what circumstances foster the individually designed school building? It is difficult to say whether locale, cost, site, climate, the detailed educational program or availability of materials and equipment dominates. Sometimes one, sometimes another or several concurrently guide

the design. If any of these factors (or of many more specific) is neglected, the school building is likely to be less than the best that can be achieved for its particular purposes; and its cost is very likely to be excessive. To the layman this is hard to understand. Why should not a repeated design save money? The long discussion that follows such a question is familiar to the professional.

The city school is designed in the face of serious handicaps: land values, taxes and construction costs all high and rising; strict building laws to protect health and safety in a congested locale; and always some form of political pressure. The suburb can usually find more land for its schools, but there land prices, taxes and construction costs

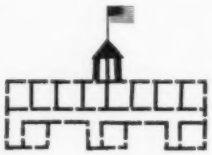


are also rising, and the cage of law and custom within which suburban schools, too, must be built is rapidly constricting as suburbs mushroom. The rural school faces fewer of these problems, but it has been consolidated almost to death; yet a few are being built. Each community, urban, suburban or rural, makes certain demands: here for specialized training, there for recalling tradition; now for adult education, again for full community participation.

The site — shall a hilly one be bulldozed level or shall the contours shape the building pattern? Is the subsoil firm; is there rock; does the soil require pile foundations? Is one structure indicated or several, one story or many? And the climate — sunny or cloudy, cold, hot, rainy, dry, snowy, windy, airless — how do these elements begin to give the buildings form and substance, to afford protection against this and exploit that? Is the outdoor scene pleasant, can it be employed to extend the building's usefulness and does the educational program take this into account? Some states have fairly rigid regulations — or recommendations that gain the force of rules as they are ever more strictly interpreted — governing building orientation and the use of sun control devices; these come into effect whenever the state's funds are drawn

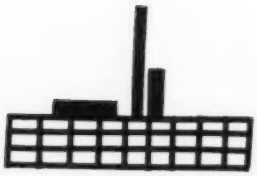
upon to eke out local resources. Some state codes are reasonable, others appear to have been drawn for the express purpose of strait-jacketing the community, the educator and the architect. This side of a state line, circular wash-fountains of the industrial type may be highly recommended; on the other, they may be frowned on.

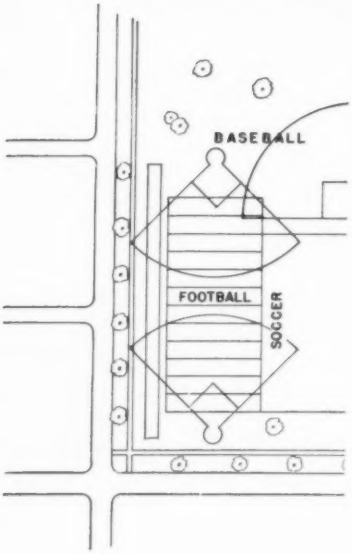
But the big battle is always to keep cost of construction within bounds.



Construction entails a large capital outlay, all at one time. The cost of operating and maintaining a school bulks large over a span of years, but it is paid piecemeal and besides it lies in the future. The reduction in maintenance and operating costs, the success of the school's functioning, that might be improved by a little more money initially spent here or a few more square feet provided there, seldom count for much when bids are being received. At that moment one would think the architect was out to rob the community purse, when actually in a fair appraisal of school building costs he has something to be proud of. According to U. S. Office of Education data, the average cost of school construction has about doubled in recent years, while over the same period the cost of other types of buildings has about trebled. While this was happening mechanical and electrical work was rising, engineers tell us, from 10 or 15 per cent of the total

contract to 30 and sometimes 40 per cent; the structures themselves have been improved and their design is more closely tuned than ever to educational needs. No stock idea, no magic formula has wrought this miracle. It has come through painstaking attention to all the detailed requirements of each individual school plant.





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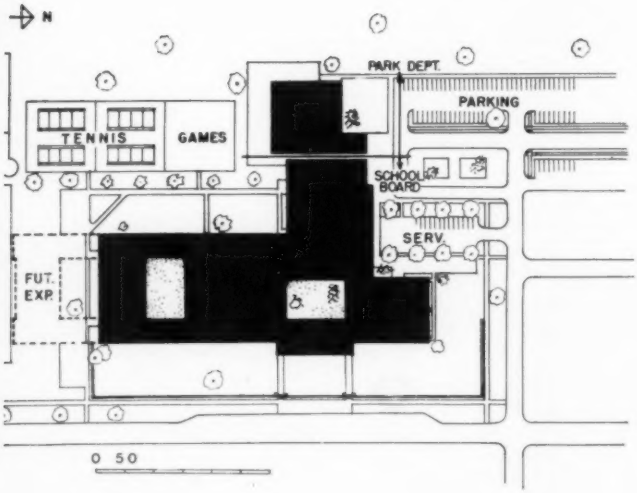


Abraham Lincoln Junior High School, Wyandotte, Mich., Eberle M. Smith Associates, Architects-Engineers; Jonathan Taylor, J. A. Wilson, A. T. Bersey, Associates. Wyandotte, an industrial city of about 45,000 in the Detroit area, is a business and cultural center for 100,000 or more people. It has more than 30 industries. Its people are of many national origins; they attend 28 churches, they have 12 public and 7 parochial schools including two Catholic high schools. They are supporting a $10,050,000 school building program, part of which is this junior high, occupied September 1955; its educational planning was initiated in 1951 by a group of 40 teachers.

Educational Specifications and The Individual School

We have in preceding pages stressed the importance of educational requirements. It would seem obvious that full development of what some schoolmen call "educational specifications" would inevitably precede the design of a school plant. How many architects know otherwise! The Wyandotte junior high school here shown was selected for publication as an example of what *can* be achieved. Wyandotte educators think a good school building is a basic encouragement and a continuing stimulus to learning. The following paragraphs, abstracted from a report by Peter J. Jenema, Wyandotte's Superintendent of Schools, help explain what educational specifications are.

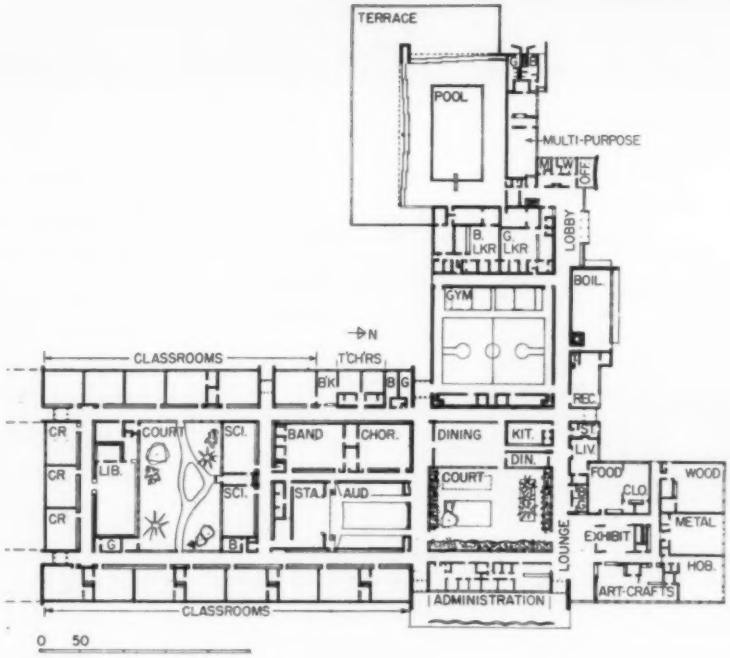
When Wyandotte decided to build two new junior high schools, Abraham Lincoln among them, school people there became enthusiastic at the opportunity to re-evaluate the existing curriculum. Nearly 40 high school teachers and administrators participated in a Curriculum Workshop which in June 1952 presented a report, "Planning for Effective Learning in the Junior High School," which resulted in official adoption of a statement of a philosophy of education:

"The responsibility of the junior high school is to provide a program in which the needs of the individual and the needs of a democratic society are served. These young adolescents face unique problems at this stage of their development. This period is characterized by: adjustment to physical changes; adjustment to others in own age group; growing independence from parents; progression toward adulthood; acquiring self-confidence; acquiring a system of values, i.e., honesty, integrity, self-respect, right thinking.

"In addition to the basic skills, a democratic society is perpetuated through developing: critical thinking; civic responsibility; dignity of and respect for the individual; understanding of other nations and societies.

"On the basis of the foregoing, the functions of the junior high school are:
1. Common learnings which include reading, arithmetic, writing, spelling, oral communication, and listening
2. Exploration which will lead each pupil to discover and investigate his specialized interests, aptitudes, and abilities and to stimulate and develop a continually widening range of cultural, social, health, civic, avocational, and recreational interests

(Continued on page 228)



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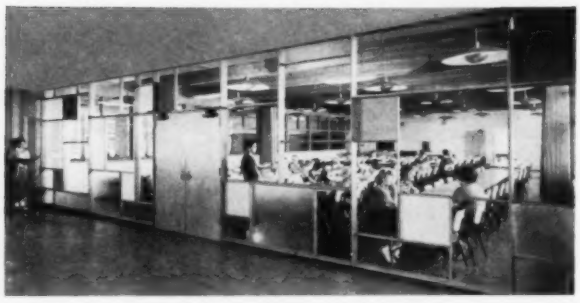
Abraham Lincoln Junior High, we have said, is the result of a thoroughly considered educational program. In September 1951, about 40 teachers began meeting two evenings a week, receiving no pay for the extra time, to re-evaluate their curriculum under the direction of Dr. Edgar G. Johnston of Wayne University (incidentally, the Board of Education paid the director's salary). At the end of the school year this group published a report defining goals (see facing page) in reference to integration, exploration, guidance, differentiation, socialization and articulation. The following September virtually the same group reassembled under their new superintendent, Peter Jenema, to write educational specifications. By February 1953 they had published a 31-page document, "Building and Classroom Design," which defined areas, equipment and many functional aspects. At this time the architects were first called in, and from then on a committee of six teachers worked with the architects. In addition, the Board of Education and the city's Department of Parks and Recreation collaborated on some portions of the work.

In direct fulfillment of the clear statement of educational requirements, the school is organized in two principal parts, each organized around a landscaped courtyard: one social, serving as a student forum, and one academic, with library and classrooms grouped around it. The social court (in full color on the cover of this issue and also above) contains a tower housing the school bell which for 50 years summoned students to classes in the old Lincoln school which the new one replaces. Trees planted on preceding Arbor Days were retained.



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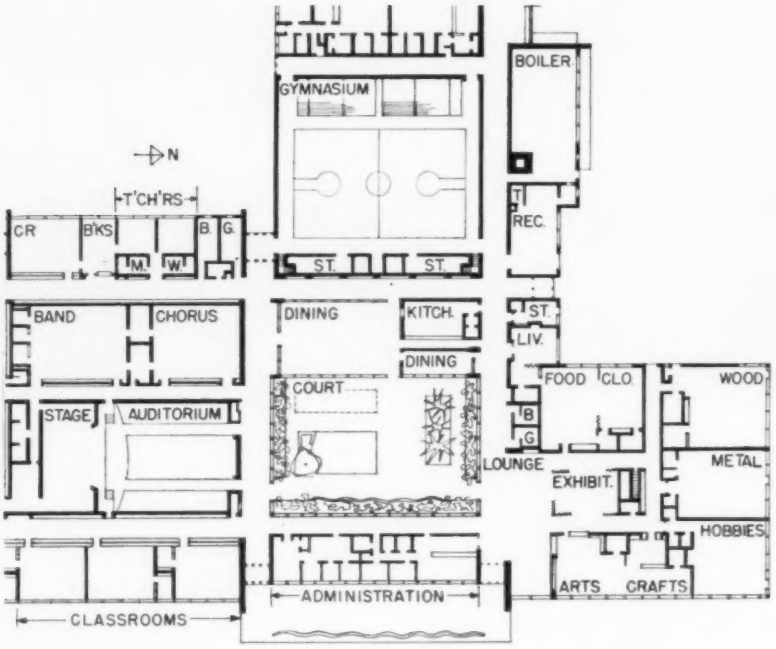


Wyandotte's Abraham Lincoln Junior High, during the months of preliminary planning, became a school for an ideal enrollment of 700 (later stretched to 800 and with an actual maximum of 900, indicating the effects of community expansion). An area for an addition is provided to the south, though the educational staff feels present enrollment is as large as it should be for the most effective teaching. Another major decision was to develop a 7–9 grade program instead of the 7–8 system previously used. Two unusual aspects of the school resulted from cooperation between city agencies. After some difficulty, the Board of Education acquired a 13-acre site adjoining a 35-acre city park. First, it was agreed that recreational and parking facilities would be shared.

Second, although the educational specifications had stated that no pupil should leave junior high without learning to swim, the building budget could not be stretched to include a pool; and at the same

time there was pressure from a group of citizens on the city administration for a veteran's memorial in the form of a city pool. In the end an excellent pool was built with sliding glass walls opening to the outdoors for summer use. Financed by the city, maintained by the school board, utilizing the school locker rooms, it is used by the school during the school day and as a city-operated public pool at other times. The pool's architect, Robert L. Svoboda, worked closely with the school's architects.

Above are pictured some of the elements clustered around the social court or student forum. Reading clockwise from the left they are: auditorium, the court itself; dining room seen through a multi-colored glass corridor wall; gymnasium; exhibit area (used for many functions); and student lounge. In these colorful areas, where every architectural element even to skylights and bulletin boards is integrated into a whole neither coyly homey nor coldly institutional, all the social activities center.

(Continued from page 224)

3. Guidance in making intelligent decisions regarding present and future educational and vocational opportunities, in making satisfactory emotional and social adjustment, and in stimulating participation in learning activities

4. Recognition of individual differences with the realization that provision for these would be considerably limited

5. Social understanding which provides for effective participation in the present complex social order and adjustment to future developments and changes

6. Evaluation by pupil and teacher of the effectiveness of the program in terms of individual and group growth."

After a summary, the group got down to specific recommendations:

"**1.** Provide adequate room space — 25 to 30 square feet per pupil, exclusive of storage; allow for minimum room size of 26 feet by 34 feet.

2. Design shape of rooms that will facilitate supervision and provide adequate lighting.

3. Lighting should be adequate and evenly provided to every pupil's advantage. Dark curtains and electrical outlets are desirable for all classrooms.

4. Acoustical treatment is needed to allow a maximum of classroom activities yet provide a well-controlled situation for work concentration.

5. The construction of ventilation systems should prevent the transmission of sound and odors.

6. The modern classroom has need of a much higher percentage of tackboard space than of chalkboard.

7. Conference rooms adjacent to classrooms are needed in nearly all instructional areas: social studies, commercial, science, library, languages.

8. Ample storage space, files, book cases, cabinets, and display cases should be built into wall areas of classrooms.

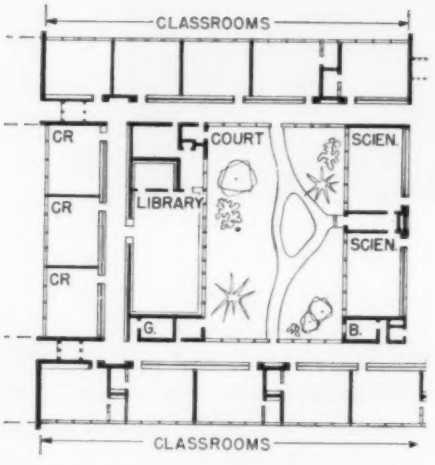
9. Both in room equipment and building plan, flexibility is essential to accommodate instructional and activity needs of the educational program.

10. Work areas such as library and classrooms should be shielded from noisy activities such as gymnasium, music, and shop.

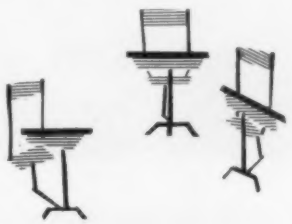
11. Orderly pupil traffic flow with a minimum of congestion is essential.

12. Pupil safety should be planned for in entering and leaving the building."

Lens-Art Photos

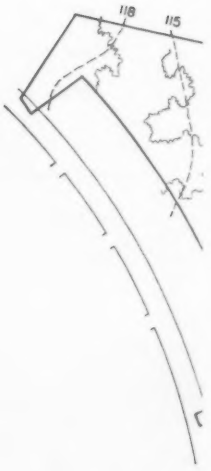


Abraham Lincoln Junior High has 17 classrooms (some of them which do not appear in the plan, left, form a link to the adjoining social areas), two science labs and library. This is a school without study halls or homework; each class period is used partly for study, and the ideal is to make the work so engrossing for students that they will pursue it voluntarily. This was an important factor in designing the library which, together with the adjacent court, forms the nucleus of this academic area. Sometimes students use the library individually; sometimes an entire class moves into it for a special project; sometimes by using portable carts, books, phonographs and records, the library goes to the students. Audio-visual equipment in particular is thus used. The classrooms are large, fully equipped, colorful, and in effect bilaterally lighted by means of continuous glass in corridor walls above door height. The courtyard serves as project area for science classes, and on occasion entire classes move outdoors. Small conference rooms adjoin many of the classrooms.

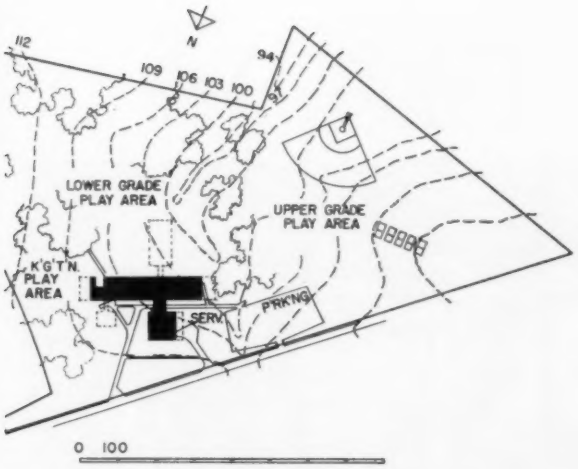


Abraham Lincoln Junior High has many noteworthy features in addition to the library (above), classrooms (below) and those shown on preceding pages. In fulfillment of one requirement of the educational specifications there are noon-hour clubs—newspaper, dancing, drama, Red Cross, cheerleading, singing, etc.—organized so the third of the student body who go home by bus will not be denied participation. Another requirement was possible variation of classroom size to accommodate future curriculum changes. For this purpose the school has a continuous radiant ceiling formed of perforated, "snap-on" metal pans suspended from heating pipes; above is thermal insulation which is also an acoustical absorbent. The space between is an air plenum which supplies all ventilation; partitions, non-bearing, can be relocated; ceiling wiring and piping can be easily changed.

Lens-Art Photos



Lawrence Williams

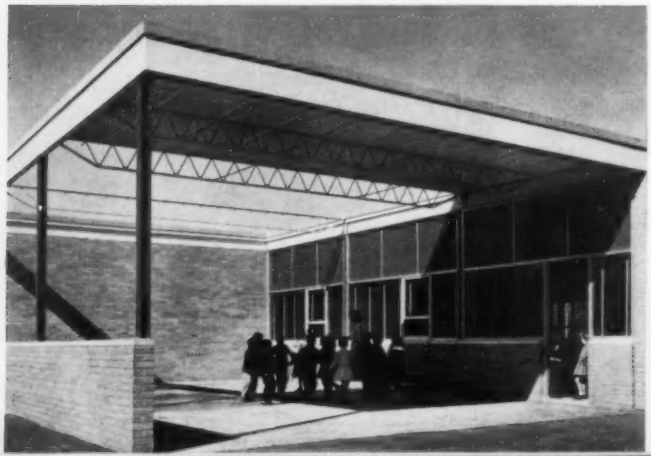


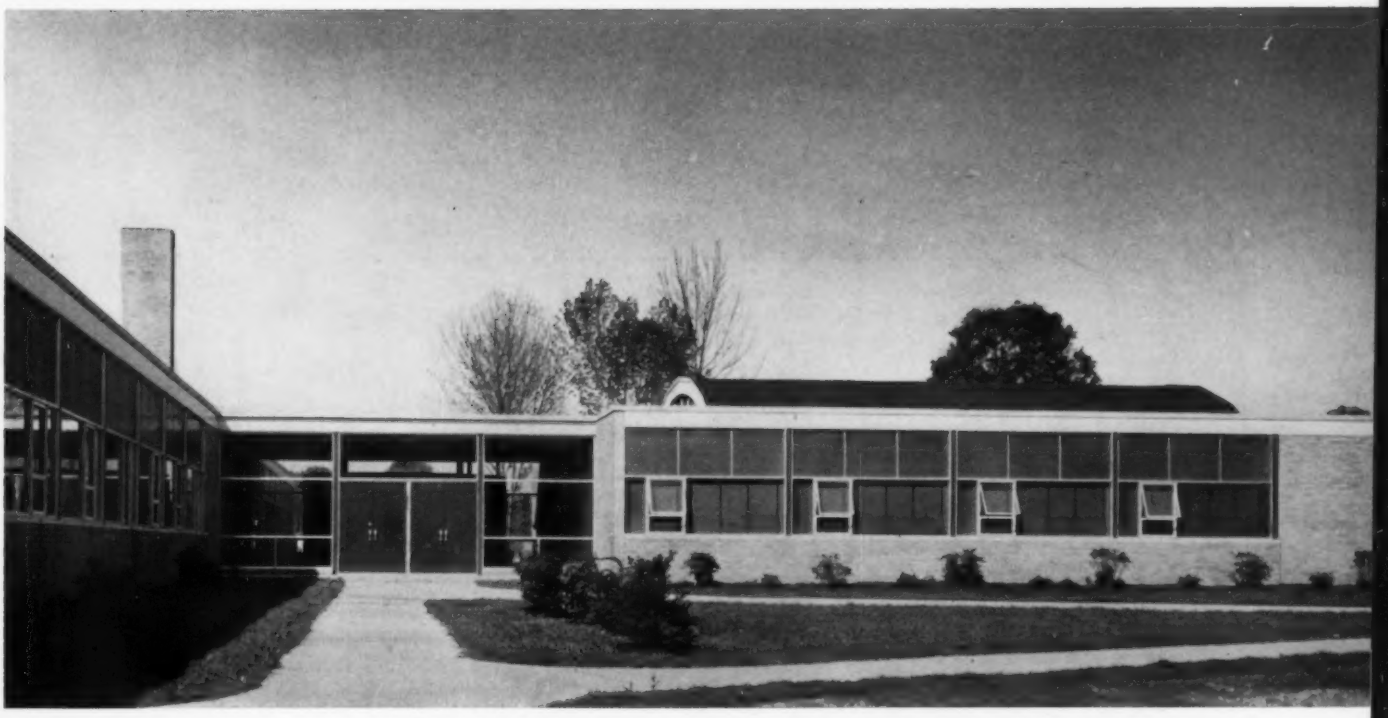
Thomas Coeburn Elementary School, Brookhaven, Delaware Co., Pa.; Clifford E. Garner, Architect; A. B. White, Associate; Keast & Hood, Structural Engineers; Ewald & Miller, Mechanical Engineers. State-aided schools in Pennsylvania, it is generally known, follow a rather strict set of regulations formulated by the state Authority. Within those limits, the first requirement the architect had here to meet was to produce a low-cost and low-maintenance structure, although the two seem hardly reconcilable. By ingenious use of a structural module and complete discipline of the design, both were achieved despite high site costs such as long service lines, new access road, slow-draining hardpan soil, etc. Construction costs were kept to $11.75 per sq ft or $.83 per cu ft; the basic costs were $315,088, less than the state allocates for such a building on a more favorable site.

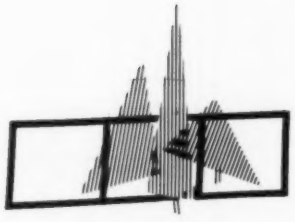
State Regulations and The Individual School

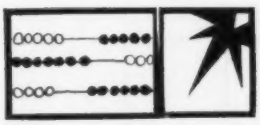
State school building regulations range from the exceedingly strict to the virtually non-existent. Generally, regulatory codes and bodies are most fully developed in the states which provide the most financial aid to individual localities and are strongest, as might be expected, where the principle of state aid has been long established. Several types of agencies are involved, and when all the regulatory bodies having jurisdiction are considered, it can be seen that the paper work required to get a school built can become exceedingly complicated. Furthermore, many state laws governing school financing have been modified at intervals and are by now pretty much of a garbled mess — which is no index of their worth, for the rationally organized school code may be one enacted years ago and not kept up to date, or it may be so thoroughgoing that the architect and the educator become thoroughly stymied. Some people point with pride to California's school laws, which provide varying degrees of "aid" for the varying financial capacities of municipalities; they set forth admirable general "standards" for orientation, sun control, plan organization, etc. The results, excellent during early years of reforming an inferior general situation, have latterly been a series of finger-plan schools with only the differences that one wrinkled pea shows from the next in the pod. Add to this the multiple clearances necessary from state financial, public safety, fire and other agencies and it is easy to see why an advanced school building concept has little chance in such a milieu except when state aid is not required, or when the school is part of a Federal program (which requires only one blanket clearance), or after exhaustive argument.

Lawrence Williams

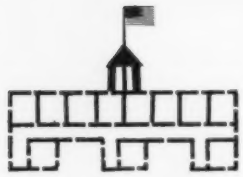




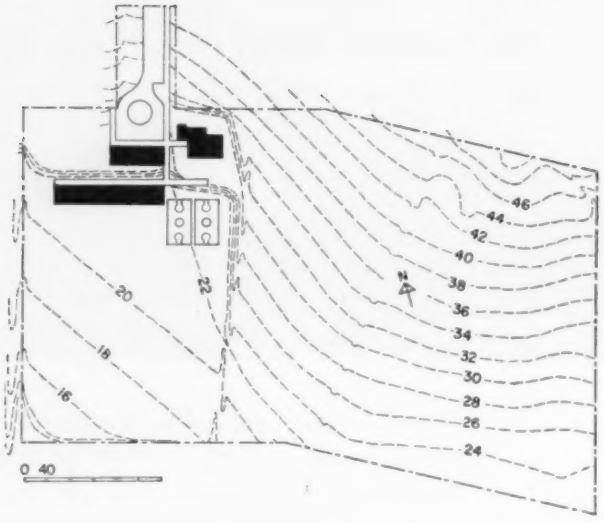


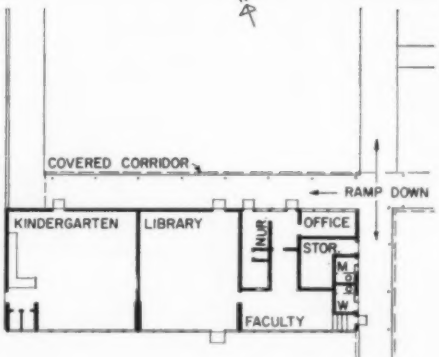


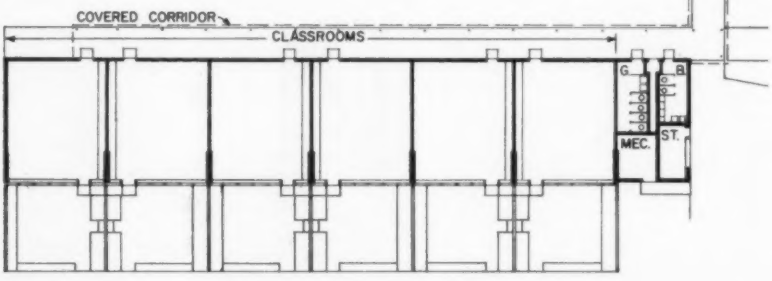
The Coeburn School in Brookhaven, Pa., was, we have said, required above all to be extremely economical. Low construction and maintenance costs were achieved through use of a structural module of 12 ft, which permitted use of standardized structural elements throughout. This resulted in economically light steel framing, economically spaced steel joists and fibrous roofing panels and an almost universal metal window unit: fixed and ventilating lights in a panel 12 by 8 ft, repeated 47 times with extensions for door jambs the only variation from standard. The building's rather severe esthetics and visual unity were a natural result. Another: the manufacturer who supplied the window units has now added them to his line.

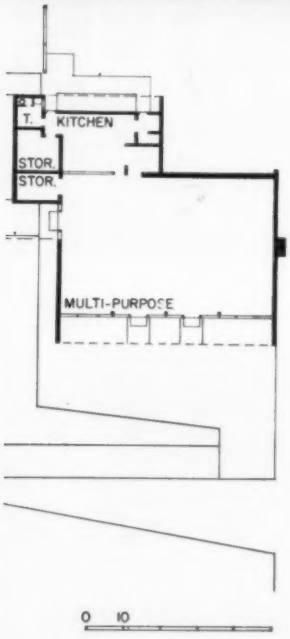


Roger Sturtevant









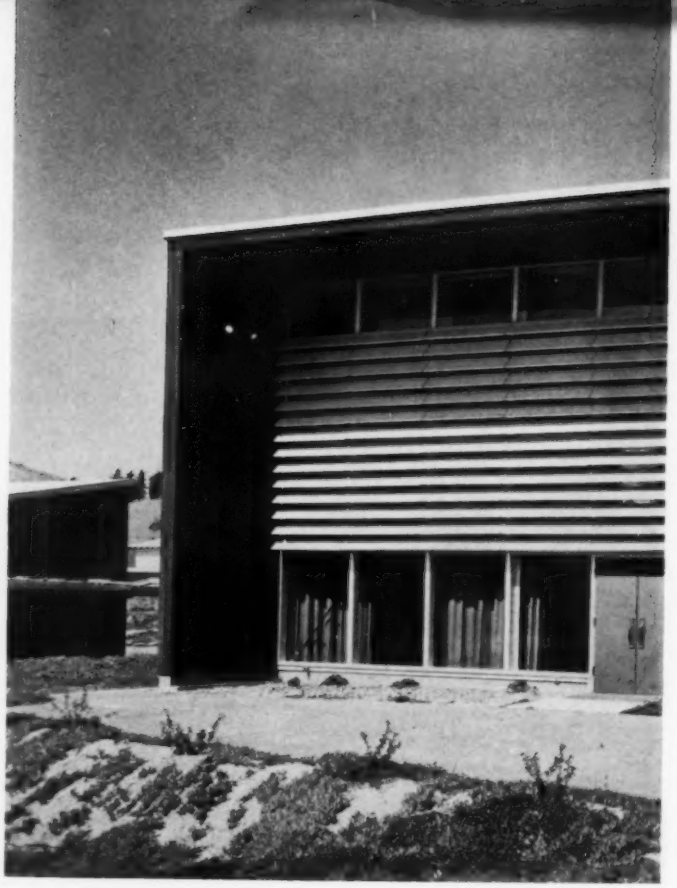
Olive Avenue School, Novato, Calif.; John Lyon Reid & Partners, Architects. This can be said in favor of comprehensive state school building controls: They greatly simplify design; they answer all questions; the busy office or the plan factory that knows the rules finds it easy to produce an acceptable job. Occasionally the superior architect can rise above the constriction of law and interpretation. Olive Avenue's architect, he tells us, found it hard to realize this job had been in his office when the time came to turn the buildings over to the school district. Everything had gone smoothly following the decision that on this hilly site there was only one suitable position for the buildings. The architectural individuality, vigor, warmth and surety of the buildings are the result of talent applied to make strong controls produce the best possible results.

More on Regulations and the Individual School

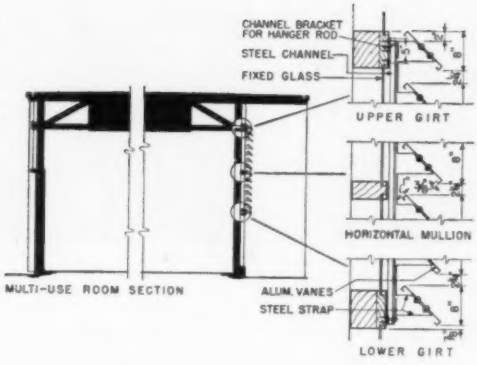
Recently we asked John Lyon Reid, F.A.I.A., for his considered opinion of his state's school building regulations. His reply: "California has been fortunate in having approximately $600,000,000 of state money made available for the construction of schools to districts that do not have local funds available. This large sum of money has great significance as evidence of a state assuming responsibility for assisting local districts to finance an educational program. When such vast sums of money are made available, it is inevitable that controls over its expenditure become more complex and rigid. California has been contributing state funds to school construction since 1948.

"At that time schoolhouse design followed a pattern of finger plans and single-loaded corridors with bilateral lighting. The growing body of controls was based on this concept of school design. Since then, controls over design and costs have grown into a vast unwieldy obstacle to an inventive and creative approach to architectural design. It seems difficult now to do any more than polish the old clichés. The basic criticism is that these controls have been imposed by non-educational agencies — I think that is the root of the trouble. The Tierra Linda School in San Carlos, somewhat conventional in building concepts (although quite unconventional in educational program) required much discussion to persuade the state agencies to make even a minor departure from conventional standards. What has been called the 'umbrella' plan used at Hillsdale is impossible when financed by state funds.

"I am deeply concerned about this situation."

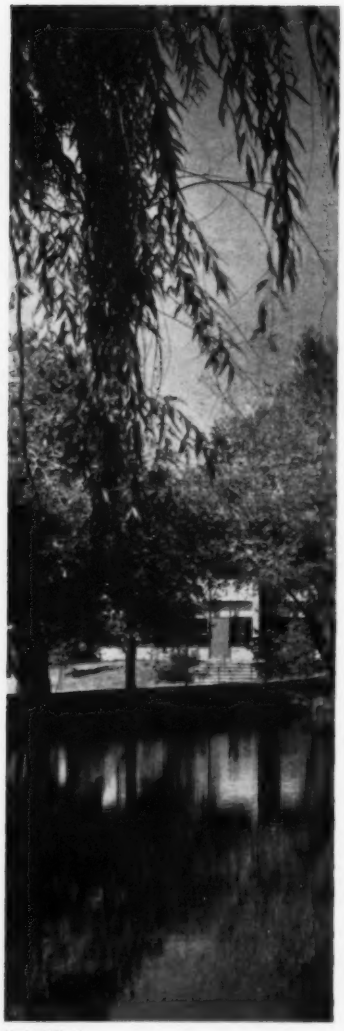


Roger Sturtevant



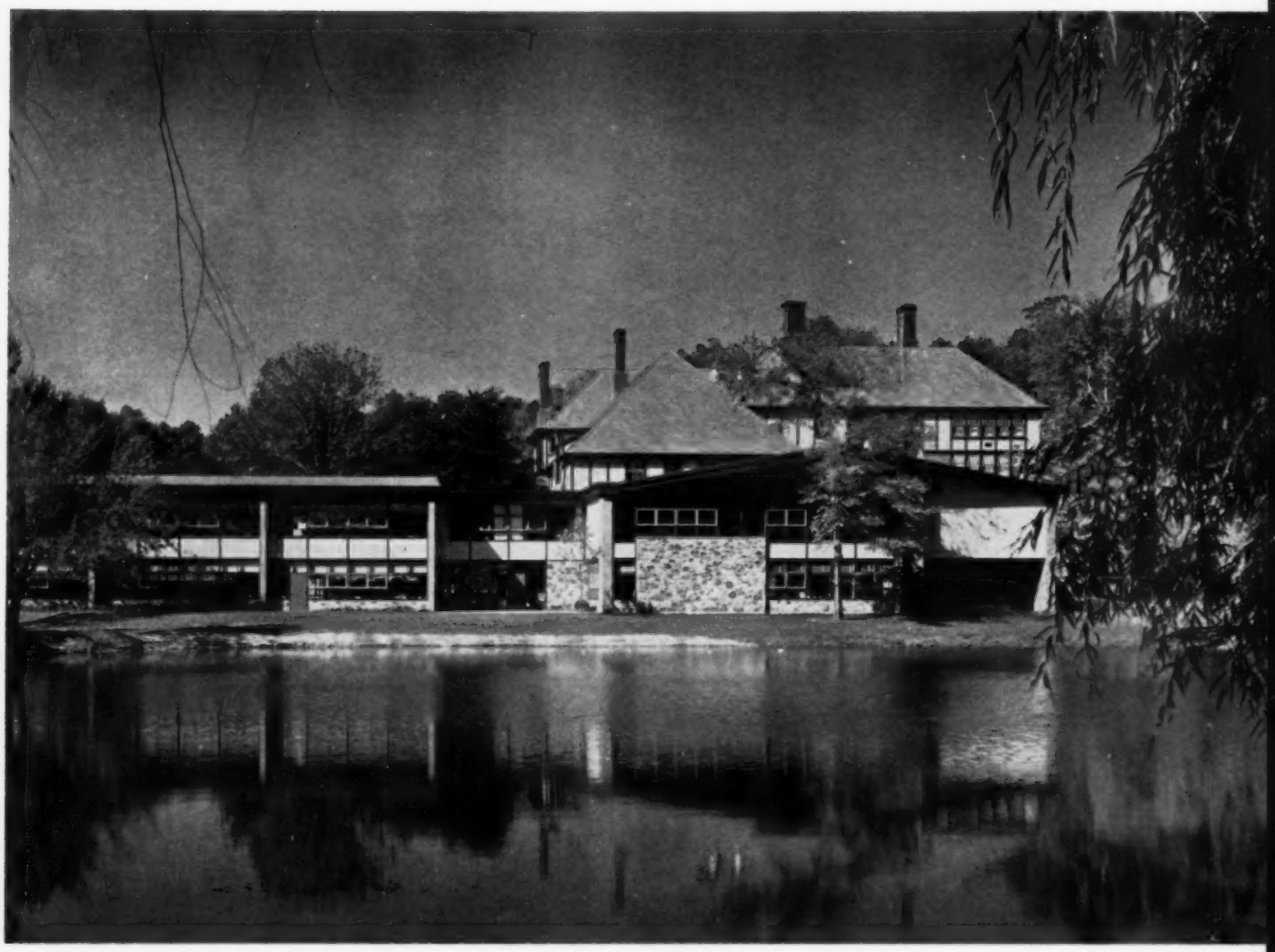
Olive Avenue School in Novato, California is constructed of familiar wood framing, redwood siding and built-up roofing in the familiar finger plan; it sits in the familiar California hills that are burned brown except for occasional patches of green eucalyptus trees during most of every year. The school is a product of the same phenomena of population growth that prevails generally in the country, accentuated here by the state's attraction as a never-never land, which has made in-migration a serious problem; and its design was found quite acceptable by the many state supervisory bodies. The architect gave his multiple client much more than could have been expected.

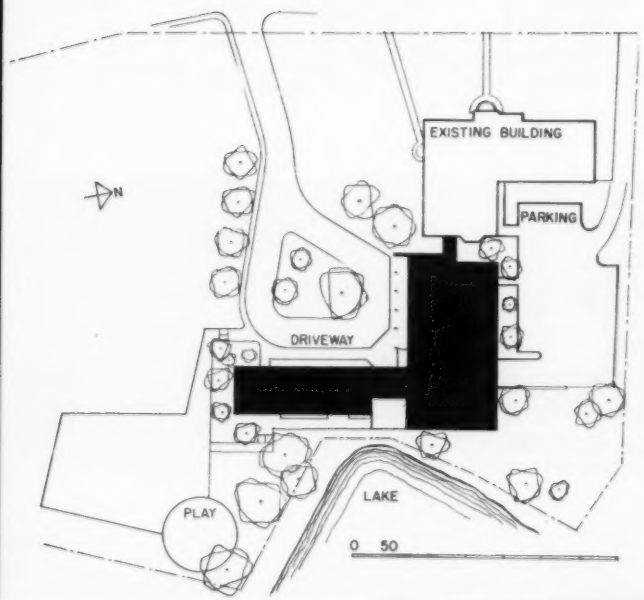
Roger Sturtevant



Hedrich-Blessing

The Olive Avenue School in California has conventional California classrooms, bilateral natural lighting carefully sun-controlled, single-loaded corridors, a finger plan. The tilted site did not take the finger plan kindly; the land drops from the entrance —curiously, from Plum Street; Olive Avenue access is prohibited by a steel fence!—some 34 ft to the rear, so a series of building terraces and a playfield were bulldozed into it. One wing is thus 5 ft above the other; the multipurpose building is 2½ ft higher still. The changes in level have been turned to architectural advantage.





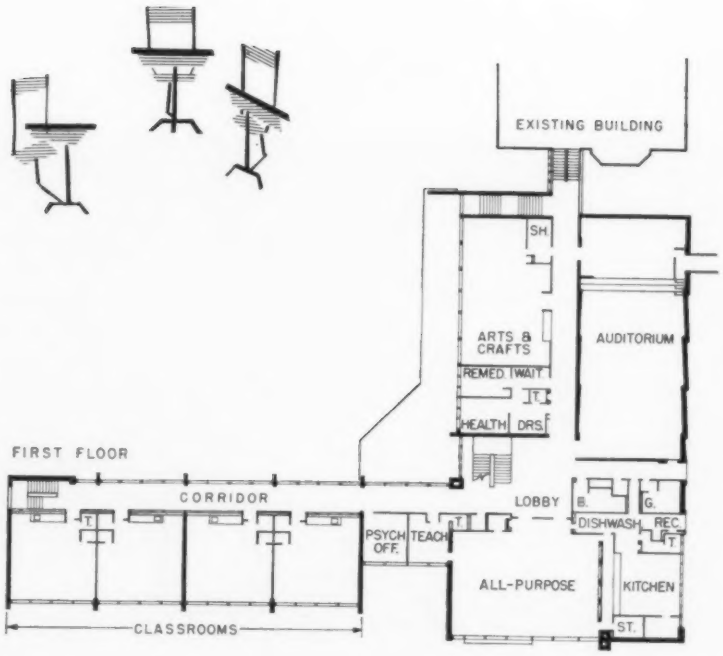
Pocantico Hills Central School, Pocantico Hills, N. Y.; Perkins & Will, Architects; Severud-Elstad-Krueger, Structural Engineers; Slocum & Fuller, Electrical Engineers. The well-to-do suburb which this school serves has an area of some 6000 acres, all in small residential neighborhoods and several estates—the largest, the Rockefeller holding, contains about 2500 acres. The only sizable tract that might be developed residentially is owned by a large corporation which at one time planned to erect on it a home office building. However, the corporation changed its plans; the existing school was extensively added to without benefit of the increased tax revenue which had been anticipated.

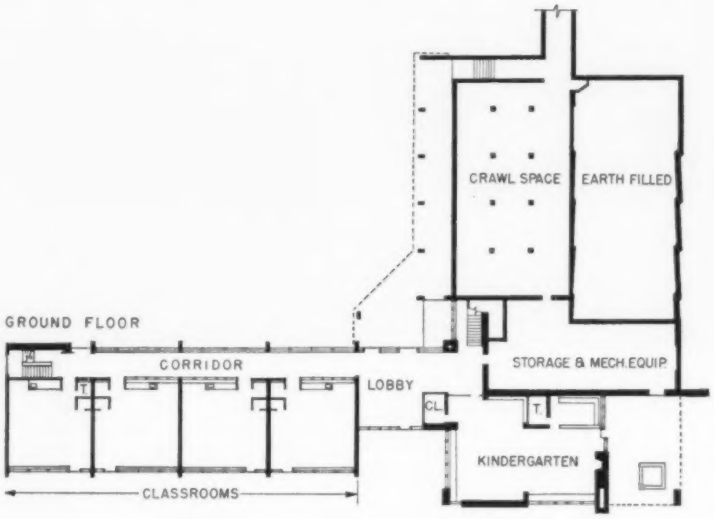
The Locale and the Individual School

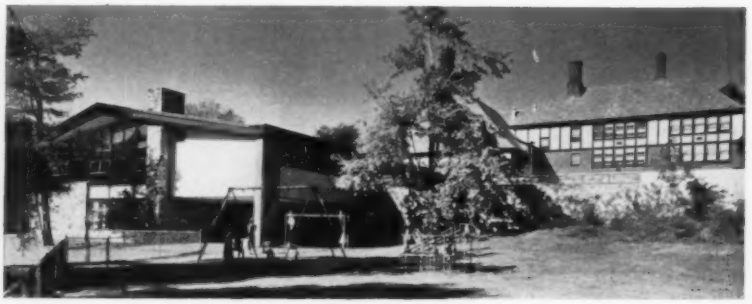
Under the heading, "Locale," we may consider several factors all directing design strongly toward individuality. These are the factors, too, that often have the most marked effects on cost. What is the community's general attitude: conservative, liberal, middle-of-the-road? Has it a generous pocketbook, or does it pinch pennies? Is there a strong local tradition to be respected; should tradition be disregarded; is the school district new and in need of getting off to a good start?

Stepping closer to the building, we come to the site itself, and to the questions explored briefly in previous pages. One not there considered is the value of landscaping — which is useful for much more than esthetics, important as esthetic quality may itself be. How many taxpayers eager to cut out all frills and nonsense — must keep within that budget! — realize that in eliminating planting they are losing foliage which is one of the simplest means of equalizing temperature, controlling humidity and outdoor noise, and stopping the wind? How many know that deciduous trees properly located can become the best sunshades of all, losing leaves to let the sun through in winter, gaining them to prevent insolation in early summer and fall?

And always we come back to the shape of the land. How far it should be judiciously molded by man to contribute to the excellence of the entire project, what lies immediately beneath the surface, what part the contours play in controlling the micro-climate, and how all these characteristics can best be dovetailed into the complex of requirements dictated by the demands of the educator, the feelings and the purse of the taxpayer and the needs of children — these are questions rarely satisfactorily answered.

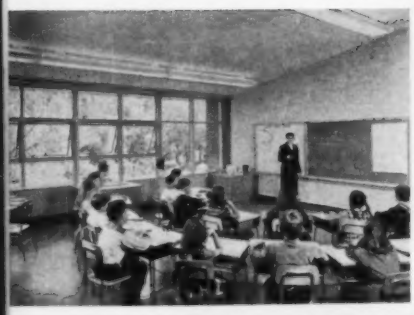






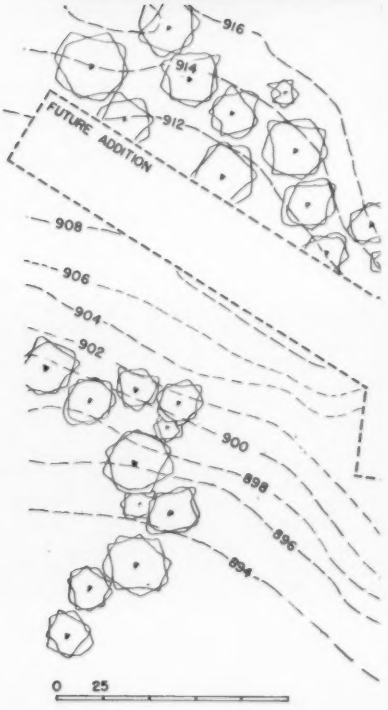
The Pocantico Hills School resolves a number of questions and in so doing achieves a distinct personality. The community is intelligent and financially more capable than many. The school district is a recent consolidation of three small ones. A survey made by several members of the staff of Teachers College indicated a fairly rapid increase in school population (which, to date and partly because certain anticipated developments did not materialize, has lagged behind estimates). Rather than build a whole new central school it had been decided to enlarge extensively the existing structure, which was designed many years ago by Carl Clark of Syracuse, N. Y., and remained quite sound though in need of some modernization. The lake, a community institution dredged out of a spring-fed bottom, and the steep site existed; excellent landscaping was in prospect and eventually materialized.

The old school had some partitions and fixtures re-arranged, its lighting was modernized and it was repainted. The addition became a two-story unit so a connection to the old building could be easily made, and the repetitive elements of half-timbering in the old were echoed in the more rationalized new building materials; stone masonry was used for its solidity and warmth of color. In such fashion were the site utilized, the new harmonized with the old and the desire for quality and tradition respected.

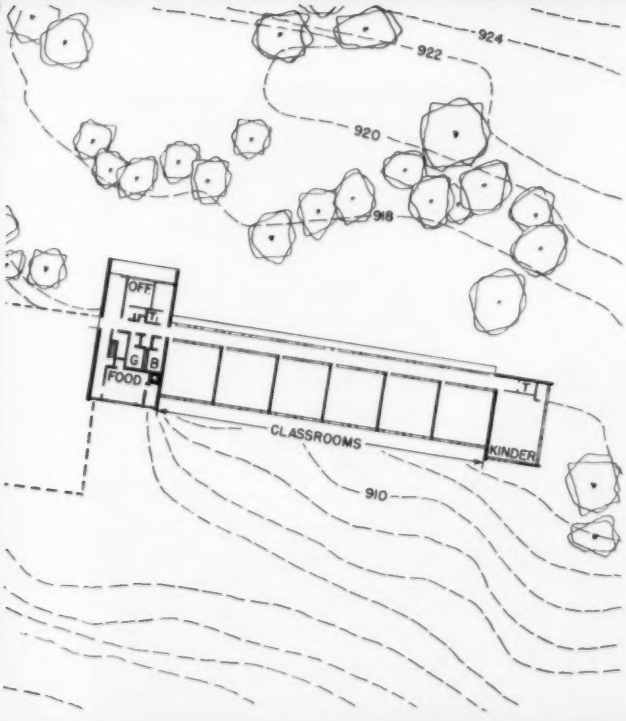


The Pocantico Hills school, whose corridors and classrooms appear above and below, was not overly expensive though its quality is high in many respects. The new building cost just over $524,850. It contains 28,944 sq ft ($18.13 per sq ft) and 329,462 cu ft ($1.59 per cu ft)—extremely reasonable figures for a very high-construction-cost area. Mechanical and electrical costs came to $133,320 of the above total; all these figures include cost of connecting the new to the old, improving the heating plant, etc. Modernizing the old building came to almost $20,500 more; site work added another $36,000. All was completed by September 1955.

Hedrich-Blessing



William Wallin



Sauk Trail School, Middleton, Wisc.; John J. Flad & Associates, Architects; Edward Pressly, Design Associate in Charge; J. L. Casey, Mechanical Engineer. Virtually every ounce of material that enters into the structure and finish of this school was carefully scrutinized before it was accepted for use. On the wooded site, wood seemed a natural material. The one-story mill-type structure has prefabricated laminated wood beams 14 ft on centers and similar columns 28 ft on centers; the beams are cantilevered 7 ft at each end to support a continuous sunshade on the east and a corridor roof on the west. Two 14-ft bays form each 28-ft classroom. The same module is satisfactory for the 3½-in. wood deck of tongued-and-grooved red cedar plank.

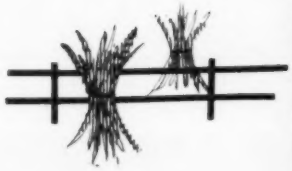
Structural Rationale and the Individual School

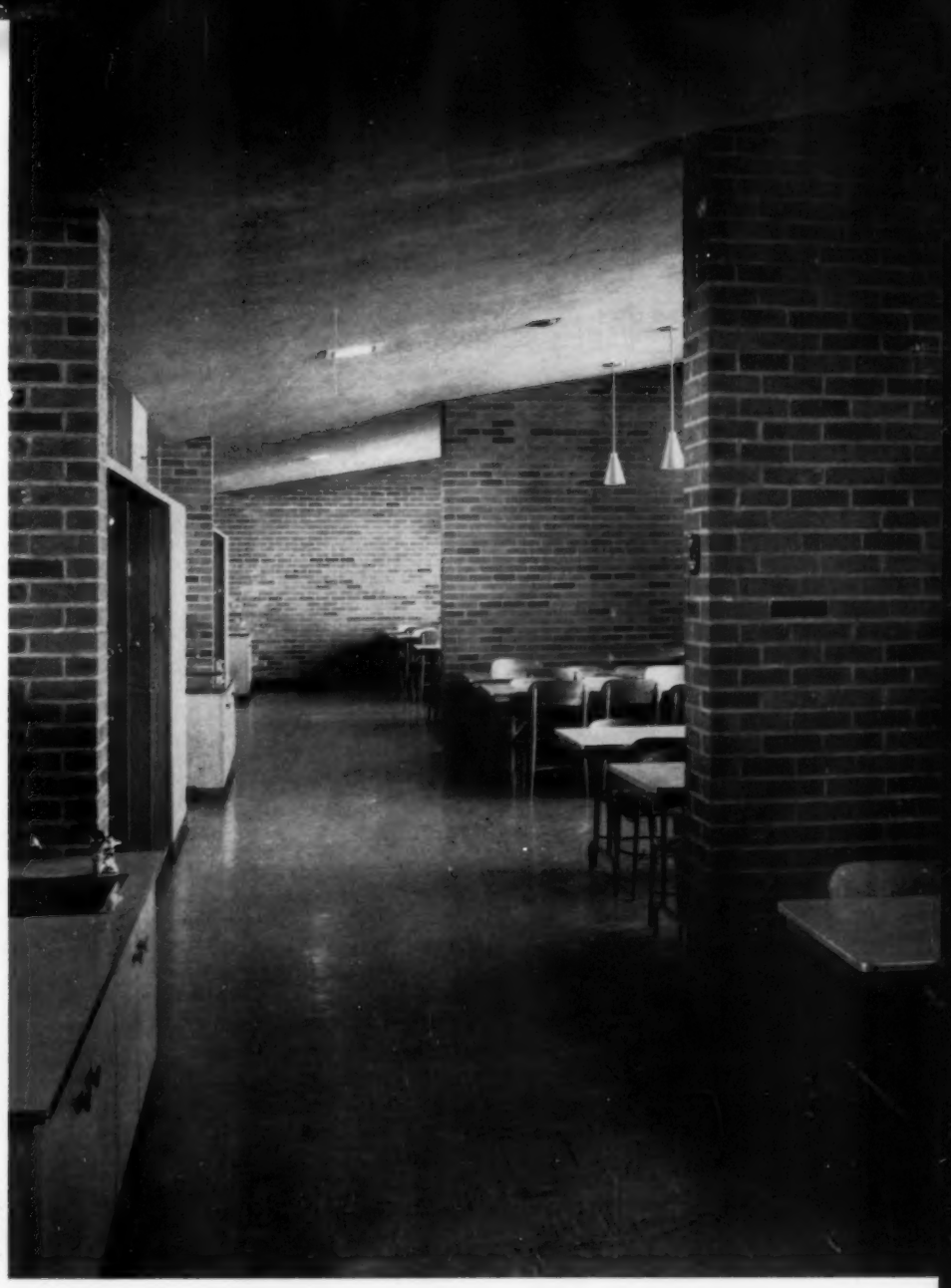
It should be apparent that the design of each school presented in this study is dominated by some principal factor. The Michigan high school grew out of a thorough educational analysis of needs. Economy was the watchword in the Pennsylvania school. A state's regulations guided development of the California plant. The New York school was designed with respect for its locale. The Wisconsin school is a completely rationalized structure. The Kansas school on the next page is a modern version of the little red country schoolhouse, consolidated. Climate strongly influenced the two South American schools that follow.

None of them could conceivably be built like the others and achieve its purpose efficiently, complicated though that purpose might be by interwoven factors. In each instance, not only are size, type, number and disposition of spaces different; the structural rationale, which also reflects the other primary and secondary design requisites, is not one but a diversity. Wood, metal, masonry, glass; wall-bearing construction or skeletal framing have been used as circumstances dictate. The results, of course, are highly individual.

The Middleton, Wisc., school has no bearing walls or partitions, exterior or interior, except that for exterior walls some brick is used where privacy or a sound barrier is required. The classroom wing exteriors are entirely composed of standardized, pre-assembled wood units—panels containing windows and insulated base portions as required. The non-glazed areas are natural redwood, vertical tongued-and-grooved, inside and out. All parts of the structure were designed to perform as many functions as possible; the variety of materials has been kept to a minimum; and every detail was developed to come within the capabilities of local artisans. A single milled shape served for all door, window and panel frames.

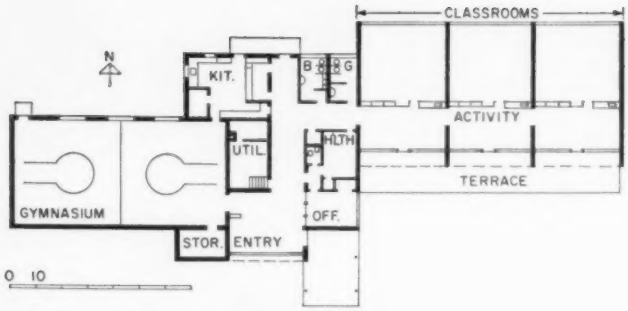
William Wallis

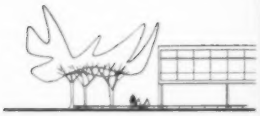




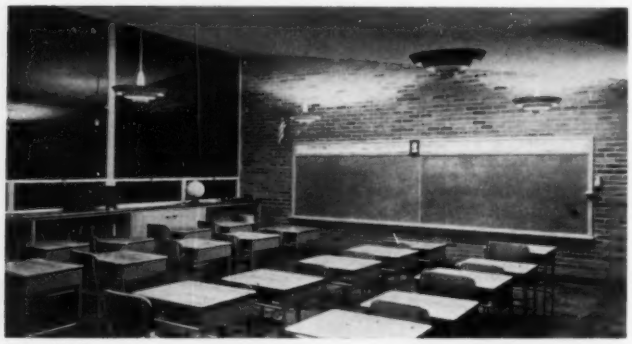
Wayne Wright

Meadow Lane School, Johnson County, Kan.; Donald R. Hollis, Architect; J. David Miller, Associate. Consolidated School District 108 occupied this school for the fall term in 1953. It replaces five typical one-room schoolhouses, some dating back to the early 1900's. Its setting, on a county road in the center of a former Kansas wheatfield, could hardly be more typical of our rural Central States region. In addition to the three classrooms provided—the corridor (above) is used as class activity space—the people of the district needed space for local Grange, Farm Bureau, Home Extension Group, 4-H Club and Home Economics meetings.

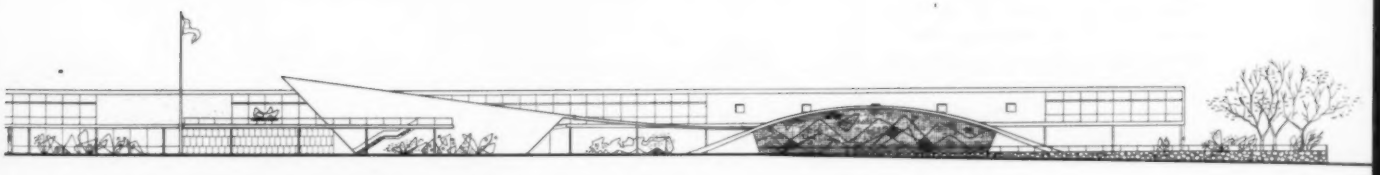


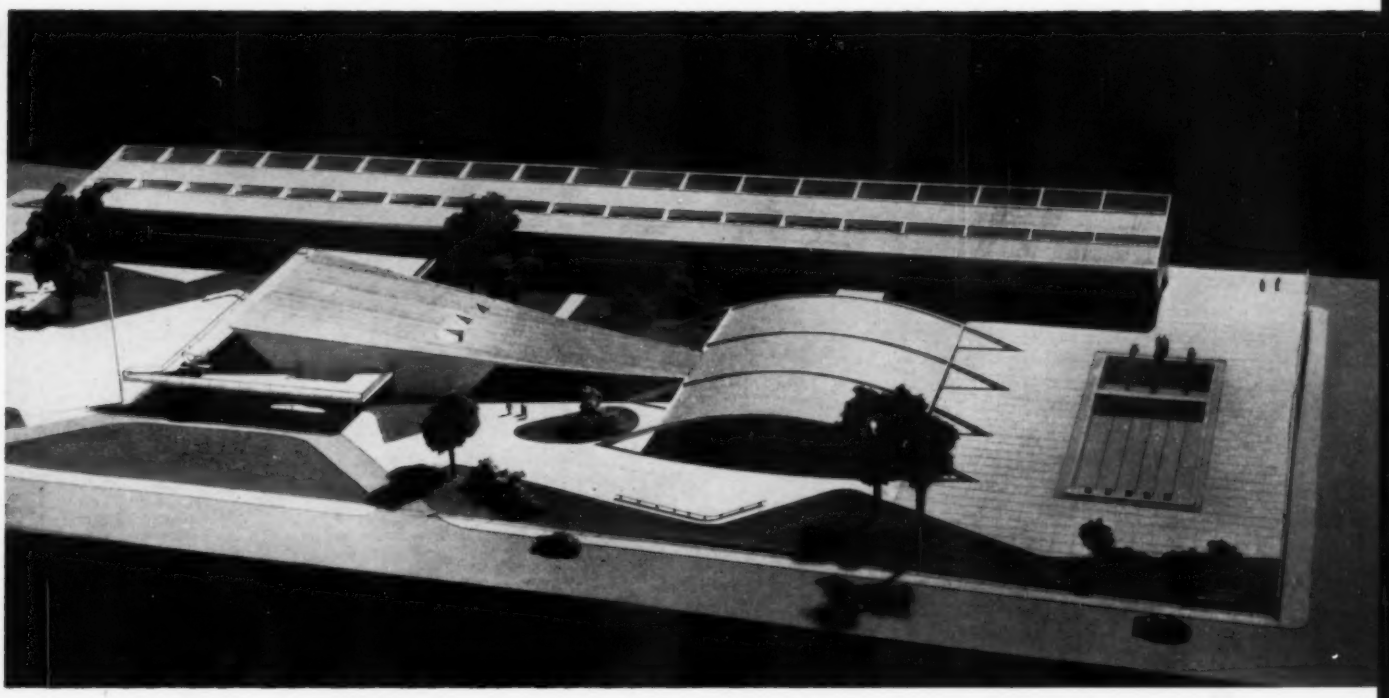


Meadow Lane School in Kansas has classrooms (photo below) which can overflow into corridor activity areas that are easily supervised through partitions composed of wardrobes, closets, counters and sinks, with glass above to the ceiling. Lunches prepared in the adjoining kitchen are eaten in the activity areas. The entrance lounge (photo at bottom) serves both the classrooms and the multipurpose room in which adult affairs are held when school is not in session; the school uses the multipurpose room for music and as a playroom. Construction is masonry throughout, both bearing walls and roof.

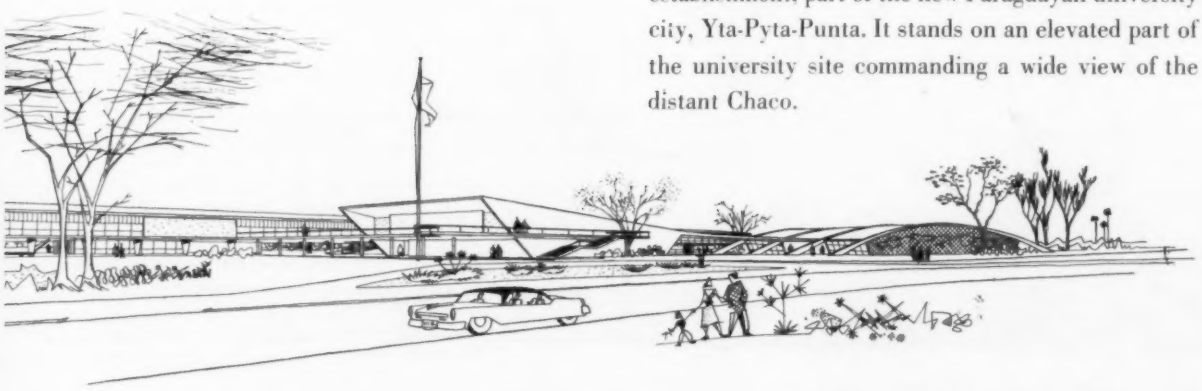


Wayne Wright





Teacher-Training School, Experimental College Paraguay-Brasil, Assunción, Paraguay, Affonso Eduardo Reidy, Architect. This school, now under construction, is a gift from the Brazilian government to the people of Paraguay. It will function as an experimental teacher-training establishment, part of the new Paraguayan university city, Yta-Pyta-Punta. It stands on an elevated part of the university site commanding a wide view of the distant Chaco.

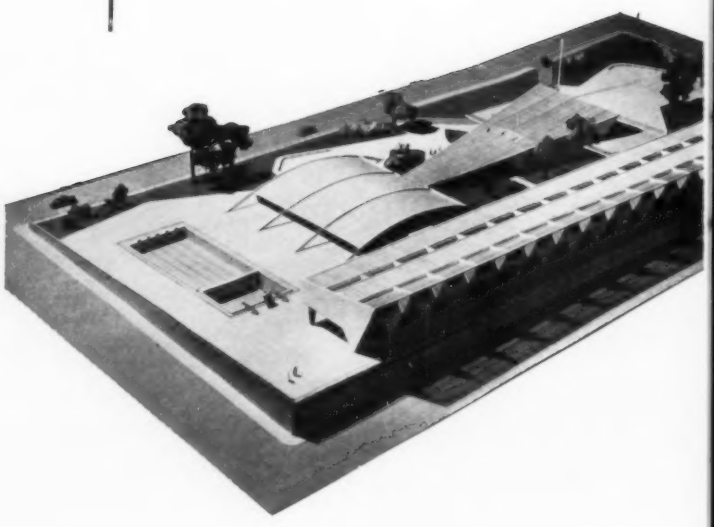


The Climate and the Individual School

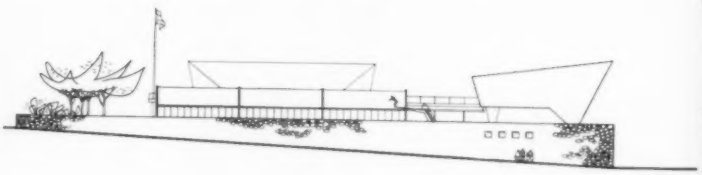
There are all kinds of extremes of weather, and in designing schools we have gone to all kinds of extremes to counter them. Before the 1930's, many state school regulations specified classroom dimensions and fenestration starting with daylight as a basis: such a dimension from window head to ceiling, from jamb to blackboard; such a ceiling height and room width. It was all empirical, the result of imperfect reasoning, and just as dubious in terms of end results as much of what we do today. Have we progressed?

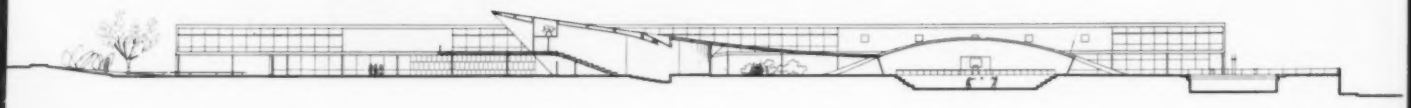
Not so many months ago New York State school authorities, realizing that rules devised for sunny California did not fit very well the cloudy October-to-May skies along the Erie Canal, called an about-face on the practice of building glass school walls and then erecting fearsome contrivances to cut off glare from the sun and the sky. There were other advantages to be obtained, too, by switching from dependence on natural light and putting all bets on artificial light. Much of the time lighting fixtures had to be turned on, anyway, in rural New York — so why not forget completely natural light through windows? With the bugaboo of pre-1930 ceiling height rules finally buried, lower ceilings could be used. That meant less cubage, less wall to construct. It saved money. It produced some very fine results. And it also produced some horribly cramped rooms.

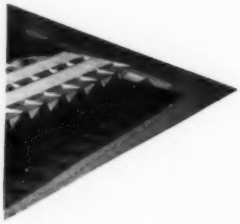
That is of course an entirely unfair example, highly exaggerated. Yet when an architect in Texas has to stand up in meeting to justify letting a little — a very little — patch of sunlight creep into a small corner of a classroom, when a Louisiana architect has to counter newspaper statements as to the unsafety of his schools that are raised on stilts to afford a little blessed shade on their cramped sites — well?

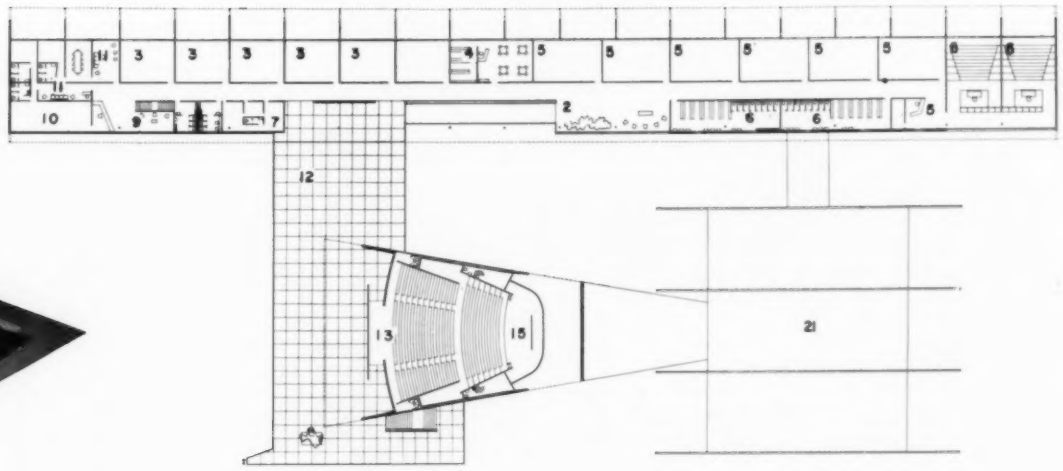


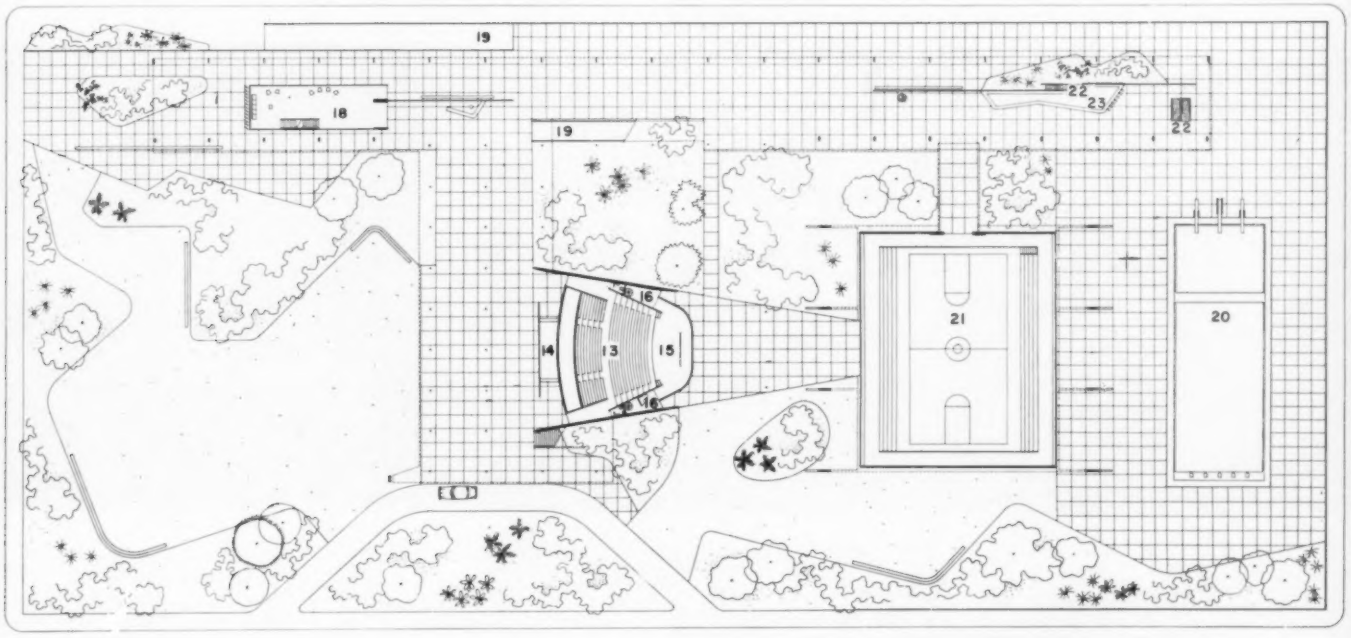
1. Ramps
2. Students' Hall
3. Class rooms
4. Library
5. Special class rooms
6. Changing rooms and lavatories
7. Health
8. Teachers' lavatories
9. Reception hall
10. Secretaries
11. Administration
12. Terrace
13. Auditorium
14. Cloak room
15. Stage
16. Service
17. Control
18. Main hall
19. Ramp
20. Swimming pool
21. Gymnasium
22. Stair to basement
23. Cafeteria
24. Lockers
25. Dressing rooms
26. Machinery
27. Storage
28. Equipment
29. Kitchen stores
30. Tunnel
31. Showers





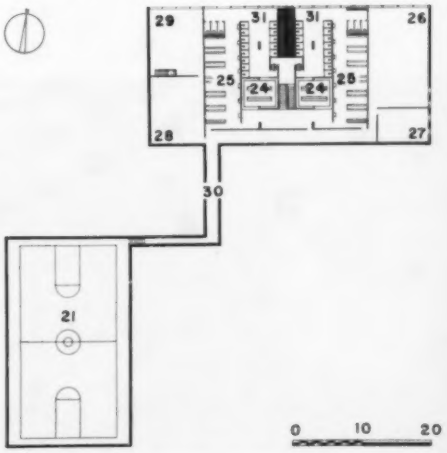


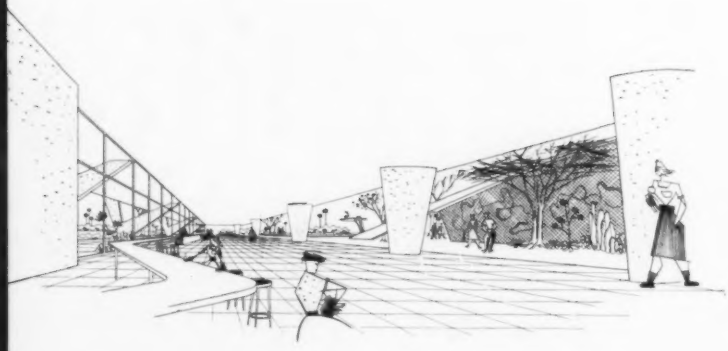




Paraguayan School (*Cont'd*)

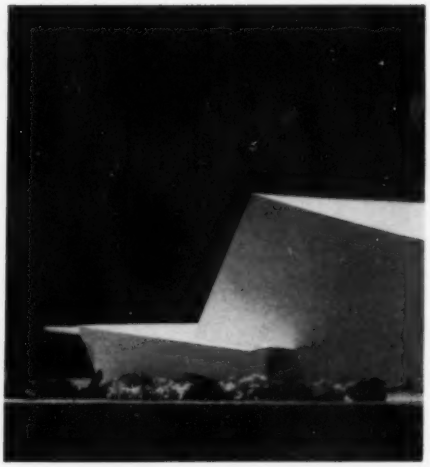
The school will occupy a large rectangle which falls slightly from east to west, with the classrooms in a long block nearly the full length of the northern part of the site, far from the main road in order to enjoy maximum quiet and pleasant view. This is also the side of the site which receives the full force of the sun in winter, although it is otherwise the best from the point of view of the local micro-climate. Protection against the sun is provided by bringing forward the main concrete frames

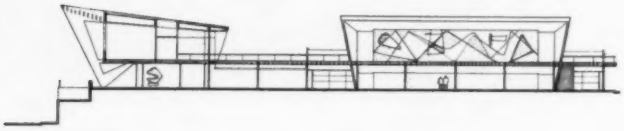


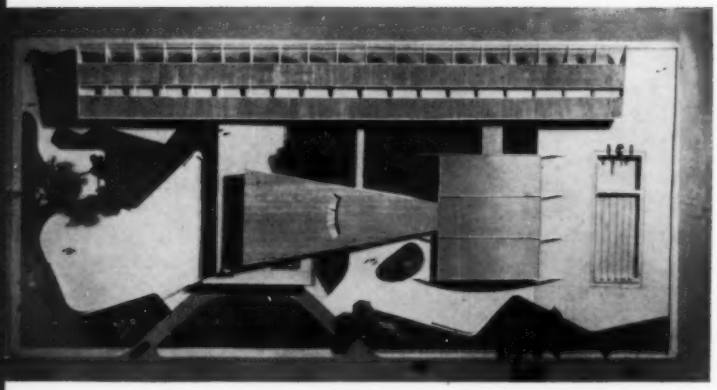


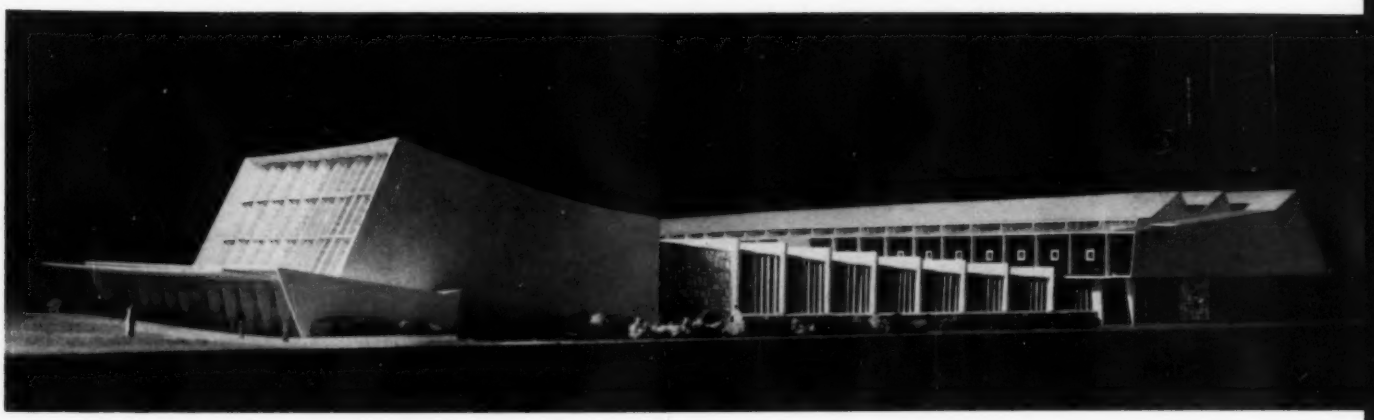
Paraguayan School (*Cont'd*)

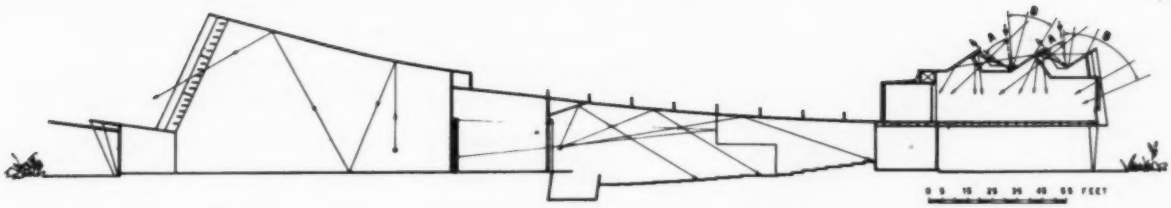
which support classrooms, so that they form projecting fins. These are canted forward to carry a horizontal sunbreaker much like a marquee. Underneath this block of classrooms is a shaded area between the pilotis, above which a large ramp provides access to the classrooms. At both levels circulation passes over and under bridges which connect the classroom block to the other main structures, the auditorium and gymnasium. These and the swimming pool are on the side of the site nearer the main road so they can be reached without causing disturbance in the classroom area. This position also permits full exploitation of the natural fall of the site in such a way as to keep excavation and earth fill to a minimum.









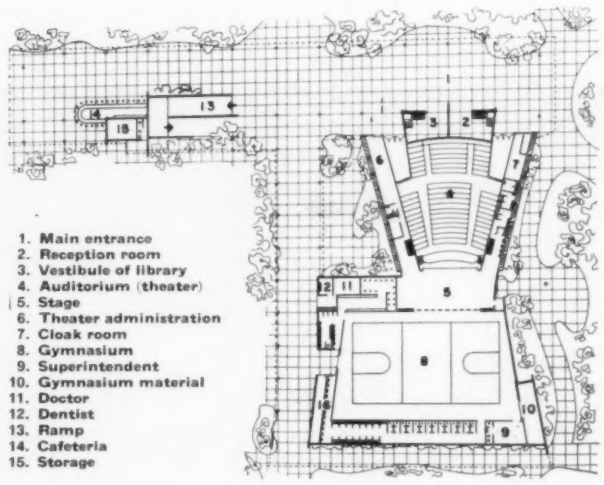


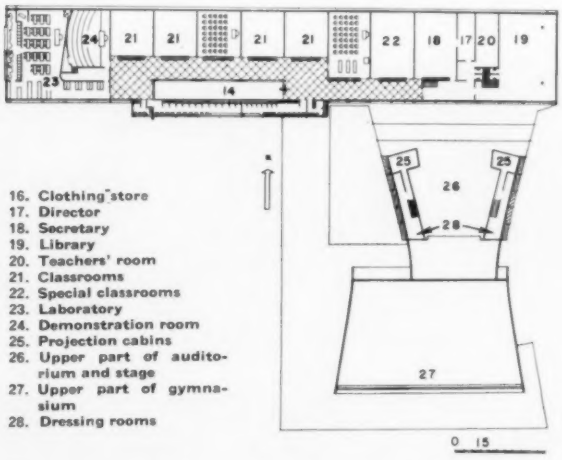
Secondary School, Rio de Janeiro, Brazil; Eneas Silva, Architect. Intense sunlight and high temperatures determined design of certain areas of this school. For one thing, the classroom block (extreme right of section above) is protected by a corridor along its sunny northern exposure—the city is below the equator; for another, neither direct nor indirect sun rays can enter the classrooms (arrows at "A"). In addition, though the classrooms are deep so specialized rooms can be accommodated within the same depth and consequently must be skylighted, glare from the sky vault is dissipated by a louvered inner ceiling. The irregular ceiling here, as well as the sloping and non-parallel walls and ceiling of the gymnasium (extreme left of section) were developed to reduce noise by preventing reverberation. The concept is also intended to induce a maximum of natural ventilation.

The Individual School

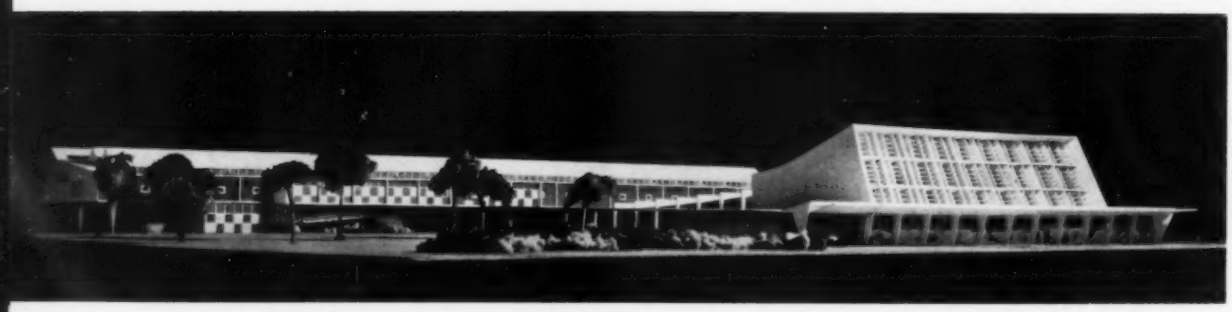
What stock plan can accomplish all the ends that we have enumerated? And by "stock plan" we mean to include not only the standard layouts of the so-called prefabricated school, but also the repeat plan pulled out of drawer number 15 by architect "X" for city "Y" (the school was the same size as that job in city "W", wasn't it?) that he first did "Z" years ago and has successfully re-used — how many times? We mean also to include the stock plan of that school the board of education thinks would be just what they need over here in this new part of town because it worked so well in that town the other side of the state. We mean to include still others (should we whisper some of them?): the conceptions of a school administrator who shortsightedly copies what his opposite number told him worked well in another situation; the state official who applies the same yardstick to every example.

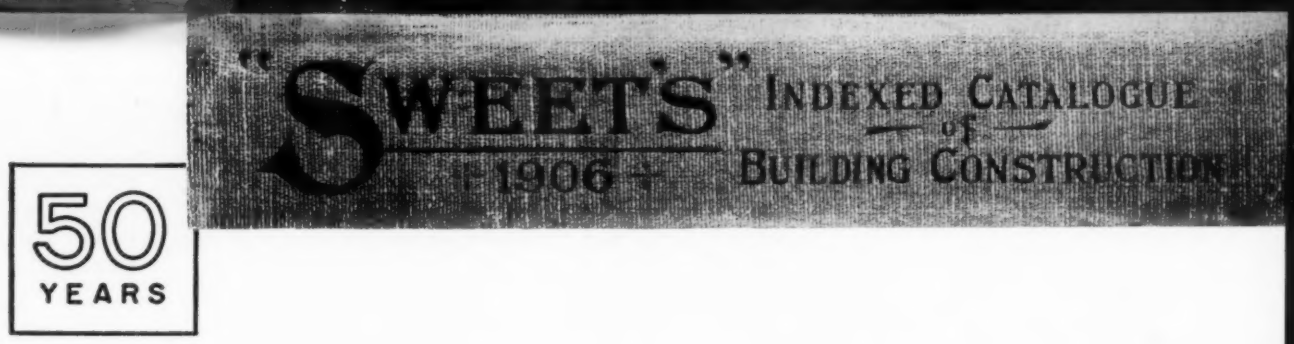
None of this works well. All of it is expensive, usually initially, certainly in the long run, both in dollars and in satisfactory fulfillment of educational demands. Educational programs are alive, if they are any good, that is; which is another way of saying they continually change. Perhaps the worst thing about the stock plan is its prohibition of the new developments educationally, structurally, technically and esthetically, which are not merely in the distant future but imminent, within almost the hour.





This secondary school in Rio de Janeiro has all the areas and appurtenances essential to American high schools, as the plans indicate. In general, classrooms are on the upper floor, public and administrative areas below. Ground-level outdoor circulation is treated as a covered patio. The rear wall of the stage is movable, so the entire interior of the gymnasium can become stage. The library and auditorium may be operated independently of the classroom wing.





SWEET'S ARCHITECTURAL FILE IS 50 YEARS OLD THIS YEAR

ANYONE TAKING A LOOK at the earliest *Architectural File* and at the latest might well conclude that building materials have not changed so much as they have accumulated.

In 1906, when *Sweet's Indexed Catalogue of Building Materials* was issued for the first time, 760 pages bound in one volume would, it was hoped, provide the catalog-ridden architect with most of the information he needed for writing specifications. Fifty years later it required 10 volumes to hold the 14,216 pages of manufacturers' catalogs in *Sweet's Architectural File.*

Distributing 5000 files may have been a fairly easy job in 1906, when each volume weighed only 10 lb four oz. This year, however, the *Architectural File* weighs 108 lb, and had to be shipped in two cartons — freighted because the parcel post limit is 40 lb. 17,000 *Architectural Files* will be distributed this year. The printing job is also immense, and requires the services of a number of printers, some hired directly by Sweet's, and others hired by clients who "print their own" and deliver them for filing; the Conkey Division of Rand McNally, in Hammond, Indiana, does much of the heavy printing and binding for the *Architectural File.*

Exactly who had the original inspiration to pre-file building manufacturers' catalogs is uncertain — the credit is divided equally between two men: Clinton W. Sweet, who published ARCHITECTURAL RECORD, and whose other business was the manufacture of Sweet-Orr overalls, and Henry W. Desmond, the first editor of the RECORD.

Prior to 1906, the architect's catalog problem, according to descriptions, was one of insurmountable chaos. Thomas W. Nolan, a professor of architecture at the University of Pennsylvania, had tried to find a practical method of handling this abundance of literature; for about a dozen years he had experimented with a number of systems. They all failed. In an introduction to the first file, he reported his findings. "Everything was tried," he said, "arrangements of shelves, bookcases, pasteboard boxes, filing cases, patent binders, filing cabinets, cases of drawers, indexing schemes and 'index-reruns.' At first, all the big books were put together in one place and all the little books in another place; and then all the big and little books were mixed

1

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3

(1) Vestal Sunshine Heater — The Reading Stove Works. (2) Nickel-plated Sponge Holder — E. C. Smith Manufacturing Company. (3) Reno Moving Stairway — The Reno Inclined Elevator Co.

S 50 YEARS

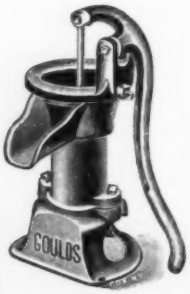
up together, and indexed according to subject. Some had four pages, and some had four hundred pages. Barely two were of the same shape or superficies. The little ones would not stand up, and could not be gotten at when laid flat. Another elaborate system was introduced, and a voluminous cross-index started, but the big books contained too much useless matter and the little books got lost or mislaid or could not be found just when wanted."

It was a French catalog — actually an index of building materials manufacturers — which Sweet brought back from a trip abroad that provided the key. That, and a survey of three thousand architects who offered their suggestions for a solution. The sum of their suggestions, according to a note in the first file, were: "condense; exclude display advertisements; expunge mere 'trade' talk; adopt a single organic plan for all catalogs; arrange all matter solely with a view to reference; edit strictly with respect to the requirements of the architect; supply a scientific cross-index; employ a legible type."

To comply with these suggestions, Sweet's insisted that the type and format for each entry be uniform — so uniform, as it turned out, that it was a little difficult to discern one catalog from another. Except for the Trent Tile Company's catalog, which had four-color illustrations of the product, the entire file was printed in black and white. Most of the manufacturers filed one-page catalogs.

In following years, however, these early standards were found to be inadequate to the architect's needs and unacceptable to the cataloger's desire for a larger margin of individual expression than was afforded under the requirements of uniformity. One of Professor Nolan's complaints, for instance, had been that manufacturers did not confine their copy to the essential description of the product, but *would* insist on revealing the intimacies of their plant management. The attitude was still apparent in the 1906 file, though mostly limited to mild statements on the modernity of production facilities. (The National Fireproof Paint Corporation, however, made the boast, grammatically rather ambiguous, that its factory was "free at all times from strikes and unfavorable labor conditions, thus insuring the prompt shipment and execution of all orders. Our plant is the only one of its kind in the world.")

4



5

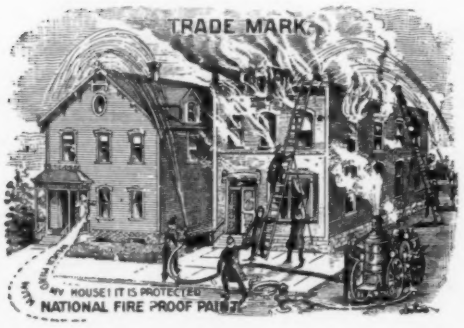
6

(4) Standard Fireproof Doors — John W. Rapp. (5) Pitcher Spout Pump for Domestic Water Supply — The Goulds Manufacturing Company. (6) Opalite Glass-Lined Refrigerator — White Enamel Refrigerator Company

After a great deal of work in its research department, Sweet's decided that after all individuality was not so bad, and under a new set of design standards established in 1943, the *File* not only permitted, but urged, individualization in the interest of both users and clients. At the same time, the minimum folio for catalogs was set at four pages — front and back covers and at least one inside visual unit; anything smaller could not properly be called a catalog. This form, Sweet's research department had determined, would not only make each catalog a visually distinct unit; the information within it would also be organized more effectively for the architect's use. The format and content of most of the catalogs are designed by the consultants, all of them architects and engineers, on Sweet's design service staff.

It is not only the design that has changed the appearance of Sweet's, though. Much of the change has been wrought by a fantastic accumulation of new building materials. In 1906, the year that Professor Nolan bewailed the insupportable technological burden placed on the architect, 498 manufacturers filed catalogs. This year 1291 manufacturers contributed a total of 1558 catalogs to the *Architectural File*. Doors and windows, for example, had 44 pages between them in 1906: this year an entire volume was required for each of them. Stable equipment was one of the 62 categories listed in the first file: it is still listed, and so are aviaries, bird repellents and cleaning equipment for animal cages, none of them offered to the 1906 designer. Bells were of course listed in both the 1906 and 1956 files, but now the category has been expanded by chimes and buzzers. If this should be viewed with alarm as sign of a noisier generation, one can also consider the sizable portion of the latest file devoted to sound control; such comfort was not offered at all in 1906.

The uses of electricity have of course had an incalculable impact on the number and kinds of building equipment. Iceboxes would have been a more appropriate name for the items included in the 1906 refrigerator catalogs, and air conditioning was almost (but not entirely) unknown. A whole range of communications equipment — microphones, public address systems, telephone systems, television systems, signaling systems — was either unheard of in 1906 or not regarded as part of the architect's purview.



7

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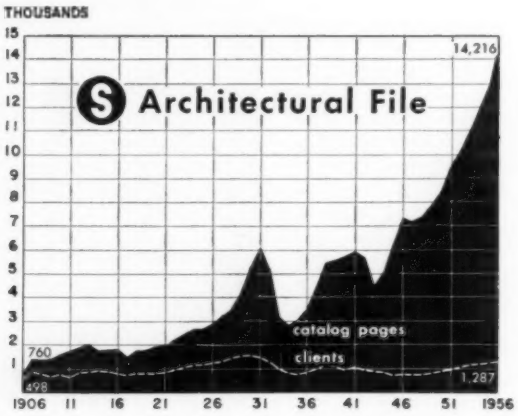
9

(7) Trade Mark — National Fireproof Paint Corporation. (8) Ideal Wall Register, open — Ideal Register & Metallic Furniture Company. (9) Cheese-cake — G. Bickelhaupt Skylight Works



Electric lighting was in use, of course, and information about it was considered germane to the designer's problems, but only Edison's incandescent bulb was around (still with a pointed end), and the uses of light except for illumination simply didn't exist.

Gas lighting, and for that matter, candle light, was still important enough to rate several inclusions. The Enos Company offered both the Bunsen Socket-Burner — "A small detachable burner closely resembling an electric socket . . . gives a *Gas* fixture the appearance of an *Electric* fixture" — and the Bunsen Candle-Burner — "By means of these candle-burners many new, artistic effects may be obtained hitherto confined to the realm of electric light."

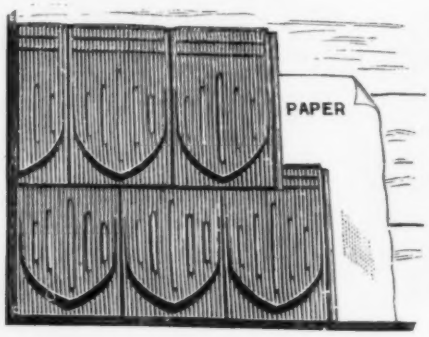
As for the design of equipment, manufacturers barely out of the Victorian years had just begun to face the implications of mass production. Evidence of the craft instinct (c.f., the Vestal Sunshine heater) was still visible. The Enos Company, despite its efforts to make gas fixtures look like electric sockets, nevertheless designed its electric fixtures to look like Louis Quinze candelabra.

Following the example set in the field of building design, Sweet's has instituted catalog services in five other fields fertile for the prefiling of manufacturers' catalogs so as to keep them instantly accessible for use when needed in the thousands of offices and plants as follows: Product Designers — 16,000; Plant Engineers — 30,000; Machine Tool Buyers — 12,000; Industrial Construction — 12,000; Light Building Construction — 25,000.

The total number of pages of market-specialized manufacturers' catalogs in the fields including the architectural is currently 25,676, an increase over the 23,700 included the year before.

Since this file is provided without charge to qualifying architects' offices, architects are often interested in the economics of the service. Sweet's services of designing, printing, filing and distributing catalogs are paid for by the manufacturers who employ these services. The charges for the services are relatively low because of the economies possible in the handling of the catalogs of so many hundreds of manufacturers — for example, the average cost to a client manufacturer for the average size catalog of 11 pages is less than 15 cents a year per office.

10



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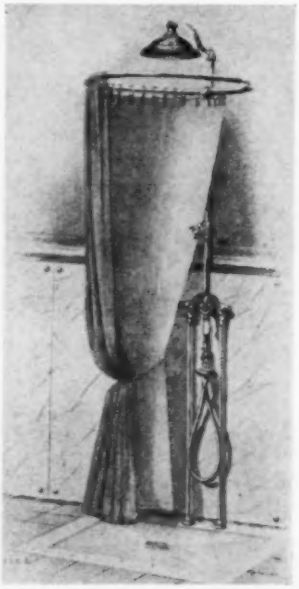


12

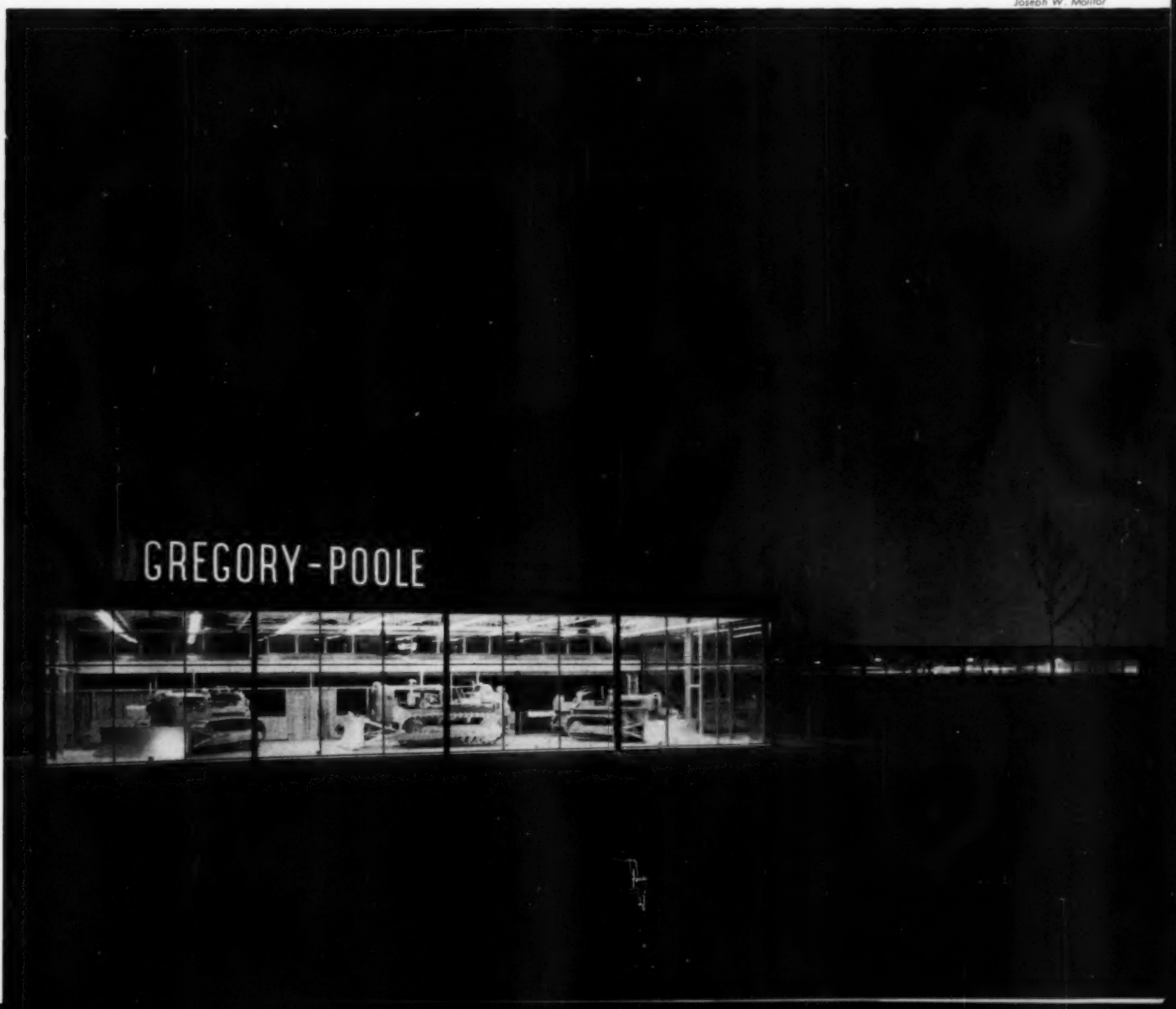
(10) No. C. 249, Chandelier — The Borough Bronze Company. (11) Merchant's Gothic Shingles — Merchant and Evans Company. (12) Complete Shower — Union Brass Works

ARCHITECTURE HELPS SELL TRACTORS

GREGORY-POOLE EQUIPMENT COMPANY, ***Raleigh, N. C.***
G. Milton Small and George Matsumoto, Architects Associated

BULLDOZERS AND TRACTORS are usually considered for what they can do to the environment. This display, sales and service building shows what environment can do for them. Though no undue expense has been undertaken, architectural talent has been employed not only in organizing the required spaces (shop, parts storage warehouse, private offices and lounge, sales and general office and the glass-walled display cage shown below) but also in making use of natural grades, in landscaping and interior decoration.

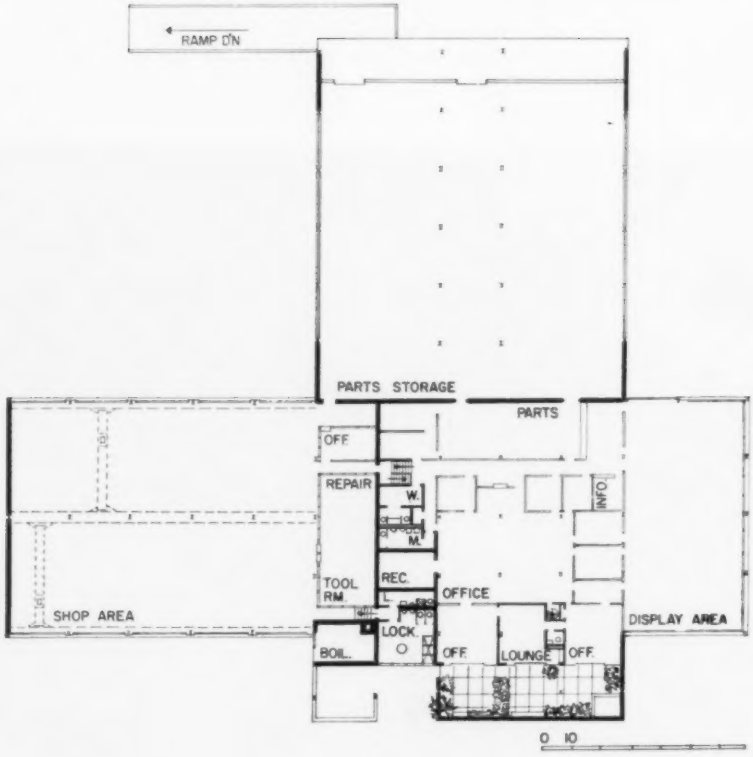
Joseph W. Molitor



Repair shop

Sales offices

Parts Warehouse



Private office

Patio outside private offices

Joseph W. Molitor

THE GREGORY-POOLE BUILDING, *logically designed and soundly-constructed, is characterized by an equally logical, quite satisfactory use of landscaping and color. Green foliage is set against buff brick; steel columns and warehouse roof girders are dark steel blue; shop crane rails are caterpillar-tractor-yellow; movable office partitions are warm wood and glass*

Through the transparent showroom can be seen, across the intervening freight tracks, Raleigh's famous Arena. Showroom, shop and parts warehouse are all laid out in bays 20 by 40 ft except for the center circulation aisle in the warehouse where 20 by 20 bays are used; office space is also laid out in 20 by 20 bays. Site slope was utilized to obtain the height needed in the shop while maintaining the clerestory height established for the showroom

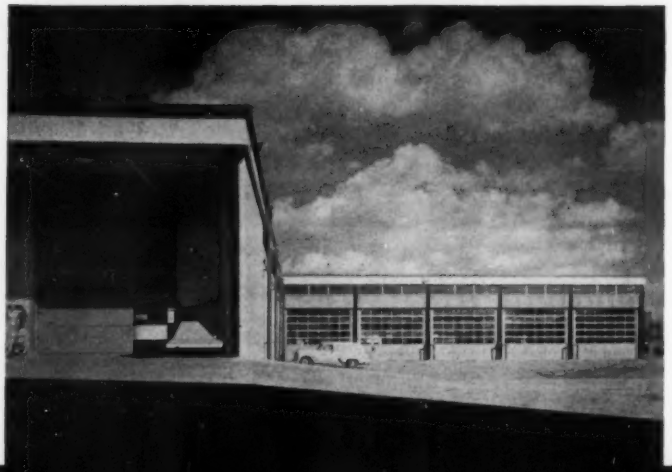
GREGORY POOLE BUILDING

Beneath the entire office section is basement storage area which, because of site levels, required little excavation. The first-floor private offices have a toilet and a small bar accessible from the lounge between them; this entire suite has sliding glass walls to the patio with its pool and planting. In effect the exterior wall of the suite is the farther brick wall of the patio

Joseph W. Molitor

Lounge between private offices

General offices



Shop at right, parts warehouse left

A PHILOSOPHY FOR BUILDING "CORRECTLY"

NERVI

Excerpts from Costruire Correttamente *by Pier Luigi Nervi. This book, translated by Giuseppina Salvadori and prefaced by Mario Salvadori, is to be published in July by F. W. Dodge Corporation.*

MANY DEBATES about architecture have been heard during the last decades and they continue today. But even if debates led to final conclusions, acceptable to the most severe critics, their practical results would be meager unless the client's judgment, the techniques and economics of building, and the academic preparation of the designer were adequate to the solution of the new architectural, structural and economic problems.

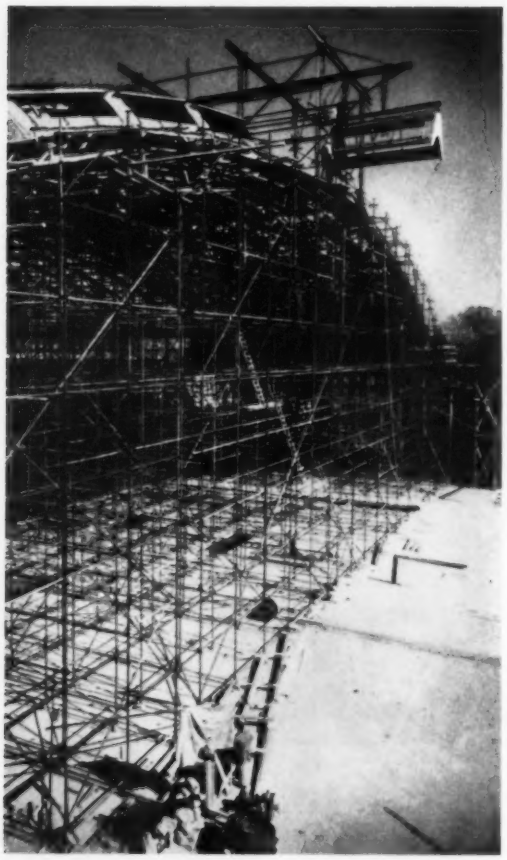
Similarly, the present dynamic development of theoretical research on reinforced concrete will not yield practical results unless we obtain a better knowledge of the actual behavior of this material and learn to relate more strictly the elements of structural intuition, mathematical calculation and construction procedure. Only a perfect synthesis of these factors can realize the unlimited technological and architectural potentialities of reinforced concrete structures.

Construction gathers in a unique synthesis the elements of manual labor, industrial organization, scientific theory, esthetic sensibility, and great economic interests. Construction creates our physical environment, and thus exercises a silent but deep educational influence.

On the other hand, we all help to determine its characteristics and the direction of its development by passing judgments, by expressing preferences or dislikes, or by intervening directly in the construction process.

THE ROLE of the client is as important as it is difficult. In my long life as a designer and builder, I have seldom found clients capable of stating their problem clearly, of choosing the designer and his design wisely, or of accepting the responsibility for a daring structural or esthetic solution.

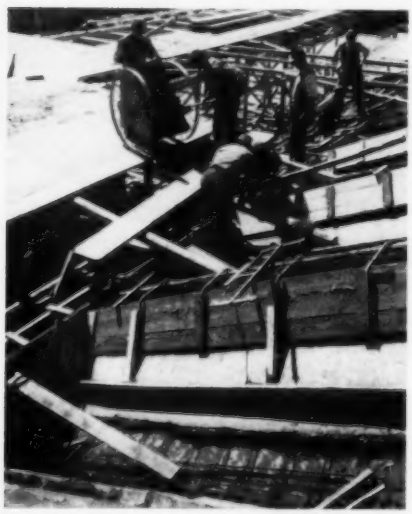
The designer, after a thorough study of the problem and under the impulse of his creativity, is naturally and understandably daring. The courageous decision of the client is to be admired much more, since it must be unemotional and must weigh, on one hand, his desire to build a structure in which he believes, but which will not necessarily be identified with him, and, on the other, his personal loss if it should fail. The client influences the architectural solution directly. Consciously or unconsciously, by defining the general outline of the structure, by choosing the designer, and by accepting or rejecting the designer's project, he becomes a decisive element of the architectural solution.



The whole structural concept and visual effect of the famed shell for the Turin Exposition Building were made possible through the utilization of a construction material developed by Nervi called Ferro-cemento. It consists of layers of fine wire mesh, and sometimes small bars, embedded in cement mortar to form prefabricated elements. For this shell they are only 1½-in. thick, and thus comparatively lightweight. They are connected at the top and bottom of the undulations by concrete arches

The average quality of the architecture of a nation is more influenced by the tendencies and the cultural level of the clients than by the knowledge and esthetic sensibility of its architects. Any hope that the modern architect, even if exceptionally capable, may win over the unsympathetic client is completely vain: in a coarse society the refined architect will be permanently unemployed.

THE ACADEMIC TRAINING of designers and builders presents a complex and difficult problem. Our universities lack tradition in the scientific approach to building because the theoretical study of structural and construction problems is only about a hundred years old. As far as an artistic approach is concerned, the revolutionary changes in the basic concepts of architectural esthetics, initiated at the beginning of our century and still



in progress, have not given us clearly defined directives, even if they have succeeded in separating our problem from those of the Beaux-Arts academies.

All fields of knowledge play a role in the field of architecture and must find in it a balance capable of expressing values of an artistic, moral and social character which are neither easily definable nor commensurable. Moreover these values are, in a sense, absolute values that truly represent the essential characteristics of all construction — durability in time.

It is my belief that to express an esthetic feeling through the states of static equilibrium, the satisfaction of functional needs and technical and economic requirements — that is, by such a variety of knowledge — is much more difficult than to express any other kind of feeling by other intellectual means.

The loftiest and most difficult problems arise in architecture from the necessity of realizing a synthesis between opposing sets of factors: the harmony of form and the requirements of technology, the heat of inspiration and the coolness of scientific reason, the freedom of imagination and the iron laws of economy.

DO BUILDING PROBLEMS, even in their most technical aspects (for instance, stability) allow unique and impersonal solutions obtainable by the application of mathematical formulas? Or, on the contrary, can they be solved correctly only through a superior and purely intuitive re-elaboration of the mathematical results, because of the complexity of the inherent deficiency of our theoretical knowledge and, finally, the wide discrepancies between theoretical premises and physical reality?

In this re-elaboration lies the most promising means of penetrating the mysteries of the structural world.

Probably because I have failed to make myself clear, I have often been interpreted as trying to undervalue the results achieved by the mathematical theory of structures. I have thus been both championed and contradicted by people who did not understand my thoughts.

It would be absurd to deny the usefullness of that body of theorems, mathematical developments, and formulas known by the rather inaccurate name of "Theory of Structures." But we must also recognize that these theoretical results are a vague and approximate image of physical reality. We come nearer to this reality only by adding to the mathematical results the results of experiments, by observing the actual phenomena, by establishing a conceptual basis of these phenomena, and above all by understanding intuitively the static behavior of our works.

The fundamental assumption of the theory of structures is that structural materials are isotropic and perfectly elastic. But the most commonly used building materials, like masonry and concrete, are far from being isotropic and elastic.

Theory of structures considers our buildings being out of time, in a kind of eternal stability and invariability. The simple and commonplace fact that all structures decay and, after shorter or longer periods of time, become unstable, or at least show excessive displacements and amounts of damage, proves that this second assumption is also unrealistic.

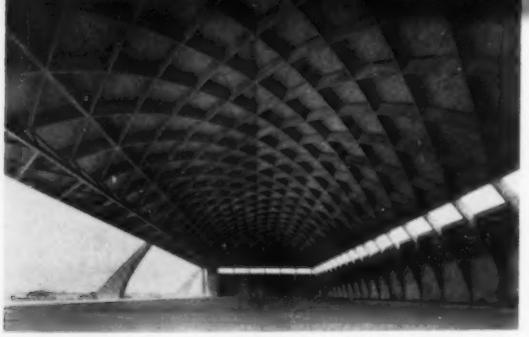
No soil is perfectly stable nor settles uniformly as time goes by. All building materials, but particularly masonry and concrete, flow viscously. The daily and seasonal temperature variations are irregularly distributed in the structure because of prevented displacements, and create stresses of unforeseeable magnitude and direction.

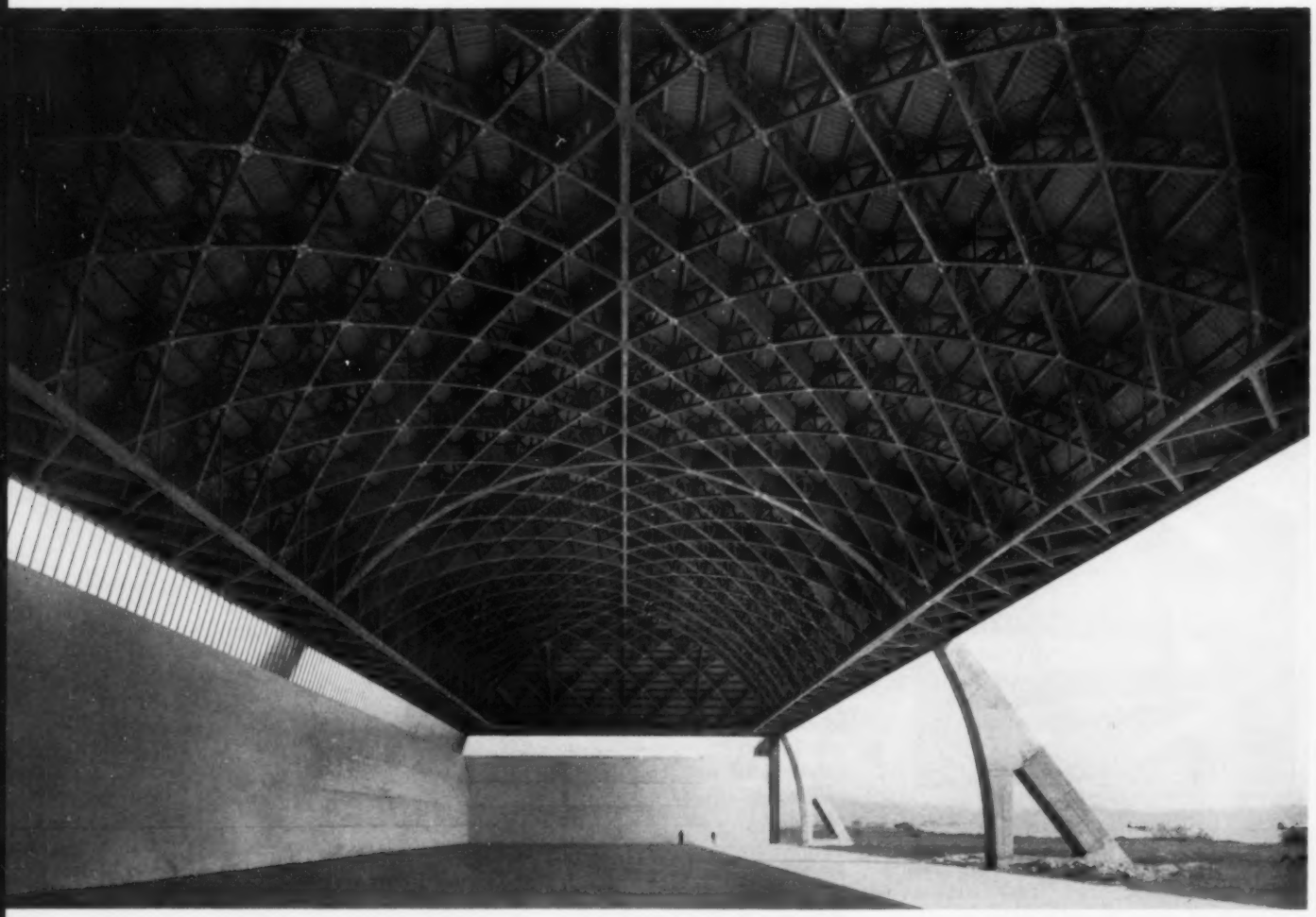
In other words, theory of structures may be compared to a physiology of perfect organisms which are permanently youthful and untouched by disease or functional deficiencies. The programs of our schools of engineering, from which the structural training of our architectural schools are derived, were set up during the second half of the past century. This was a period of great and justified enthusiasm for the developments of mathematical theory of elasticity which clarified the behavior of materials under load and allowed the analysis of statically indeterminate structures. As usual this enthusiasm impaired the objectivity of the engineer, who was led by his mental make-up to believe in the theory even when it was contradicted by facts.

The pre-eminence given to mathematics in our schools of engineering, the purely analytical basis of the theory of elasticity, and its intrinsic difficulties, persuade the young student that there is limitless potency in theoretical calculations, and give him blind faith in their results. Under these conditions neither students nor teachers try to understand and to feel intuitively the physical reality of a structure, how it moves under load, and how the various elements of a statically indeterminate system react among themselves.

We cannot deny that the potentialities of mathematical methods are soon exhausted, even when their application is difficult and complex. Skin-resistant and highly indeterminate structures cannot be analyzed by mathematical theories, although these structures are extremely efficient from a technical, economical and architectural viewpoint.

The formative stage of a design, during which its main characteristics are defined and its qualities and faults are determined once and for all, cannot make use of structural theory and must resort to intuition and schematic simplifications. The essential part of the design of a building consists in conceiving and proportioning its structural system,





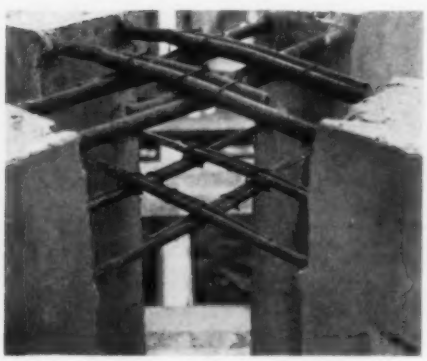
Model analysis in design and prefabricated components in construction are two basic elements in the building philosophy of Nervi. His hangars exemplify both. (There were six, all destroyed by war.) The first hangar, (top) built in 1935, was cast in place, and its design was based primarily on model analysis. A major improvement in later hangars was the use of prefabricated trusses to lighten the structure. Trusses were joined by welding of reinforcing bars and filling space with high-strength concrete

in evaluating intuitively the dangerous thermal conditions and support settlements, in choosing materials and construction methods best adapted to the final purpose of the work and to its environment; and, finally, in seeking economy. When all these essential problems have been solved and the structure is thus completely defined, then and only then can we and should we apply the formulas of the mathematical theory of elasticity to specify with greater accuracy its load resisting elements.

The student lacking a thorough knowledge of structures considers an actual building essentially as a form. This attitude fosters solutions which are statically illogical and at times unrealizable, and starts an inner conflict between a desire for structural audacity and the incapacity of its realization, which is common to the great majority of designers today.

Unfortunately, although the present methods of stress analysis are extremely ingenious and one may hope that they will be refined in the near future, their efficiency in solving complicated statically indeterminate systems (particularly three-dimensional systems) is limited in comparison with the creative potentialities of the imaginative designer and the available construction methods. Some of the newer systems cannot be analyzed theoretically, and, therefore, their realization would be impossible without the practically limitless assistance offered by experimental stress analysis.

The only drawback to the experimental procedure is that the preparation of the model, its loading, and the reading of gauges are lengthy and costly operations. Whenever possible, it is therefore more convenient to use a theoretical approach and to limit the use of model analysis to structures of special technical and architectural importance.



WHAT SIGNIFICANCE can we give, and what limits can we assign, to the word *art* in the field of construction? Can we consider as an artistic fact a structure or a building which is strictly defined by the laws of statics and dynamics, independent as they are of the human will and of our esthetic feelings? Are the parabolic profile of a great bridge, the catenary of a suspension bridge, the aerodynamic shape of an airplane to be considered artistic? Doesn't art require a freedom of form and of expression denied to all human products governed by physical laws? And how are we to establish how much freedom is necessary and sufficient to art?

I believe that art gives more than simple esthetic satisfaction. I think art is to be found in that indefinable quality of work to evoke in our minds the feelings and emotions experienced by the artist in the impetus of creation. If this emotional communication be the test of art, to define its characteristics is obviously impossible and to try to teach art would be negative and fruitless.

I believe, therefore, that the most effective artistic training should not go beyond those limits which in the field of literature are represented by grammar and syntax; that is, beyond the mastering of the means of expression. These means allow one to say what is to be said in correct, understandable, and formally satisfying sentences, or at least sentences which are not unpleasant.

The field of architecture presents the same situations. The real danger to architecture, today as always, is not represented by a simple, humble, and correct approach to its problems, but by an emphasis on rhetoric or by a decorative vacuum. These dangers are of a more fundamental character in architecture than in literature, since one cannot ignore an architectural failure, and one cannot forget the economical losses due to architectural rhetoric.

I believe, therefore, that the schools of architecture should above all teach structural correctness, which is identical with functional, technical, and economic truthfulness and is a necessary and sufficient condition of satisfactory esthetic results. The esthetic results achieved by these means usually suffice even if they do not reach superior heights of art.

I believe that even philosophers interested in esthetics find it difficult to explain the origin of our feelings toward forms which are dictated by the laws of statics or dynamics, since these laws are not intuitively understood, nor are they explainable by the experience of our ancestors. But there is no doubt that any product of high efficiency is always esthetically satisfying.

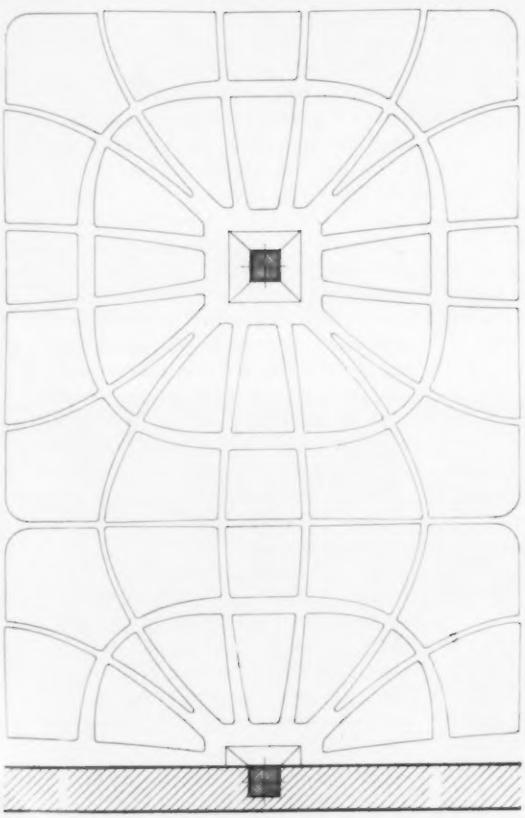
REINFORCED CONCRETE is truly the most interesting and fertile structural material available to mankind today because of its high compressive strength, its exceptional weather resistance, its constructional simplicity, and its relatively low cost.

As against these and many other positive qualities, reinforced concrete presents some hidden deficiencies and specific characteristics which make its structural behavior difficult, if not altogether impossible, to foresee exactly. Its high thermal sensitivity, its shrinkage, and above all its plasticity, shatter our hopes of investigating or knowing either before or after construction the real conditions of equilibrium of any statically indeterminate structure.

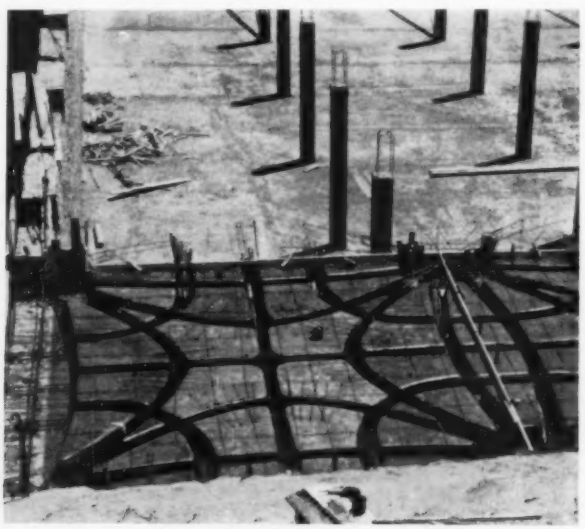
A few days after being poured, a concrete structure, particularly if it is complicated, is strained by internal forces that are independent of the external loads. These forces grow with the shrinkage of concrete and under the influence of thermal variations until the plastic flow of overstressed sections or the development of fine cracks brings about a sufficiently stable condition of equilibrium.

We must frankly confess that neither the designer nor the builder can be entirely satisfied with this final result. Even if the cracks, the excessive stresses, and the plastic flow are not considered dangerous, the solution is obtained at the cost of the structural continuity of the building — that same continuity which was the object of such complicated calculations.

Another factor of great importance to the success of a reinforced concrete structure is good formwork. The lowering of the forms of a concrete structure may well be compared to the critical moment of delivery. Whenever I have witnessed the lowering of the forms of a large structure constituting a single static system, I have noticed the impossibility of lowering all the forms simultaneously and have asked myself with deep anxiety whether the strains and the irregular conditions of loading to which the structure was subjected at the time would not induce stresses far above the allowable limits, or even above the breaking point. The adaptability of concrete structures to unforseen conditions and their capacity to over-



"The pattern of steel should always have an esthetic quality and give the impression of being a nervous system capable of bringing life to the dead mass of concrete." Amazingly, such a design condition may arise out of the structural requirements, as in the Galti wool plant in Rome. Slab ribs are set along the isostatic lines of principal stress. These lines depend exclusively on the loading of the floor. Movable forms of Ferro-cemento, cast previously in plaster molds, allow complete freedom of form in the ribs



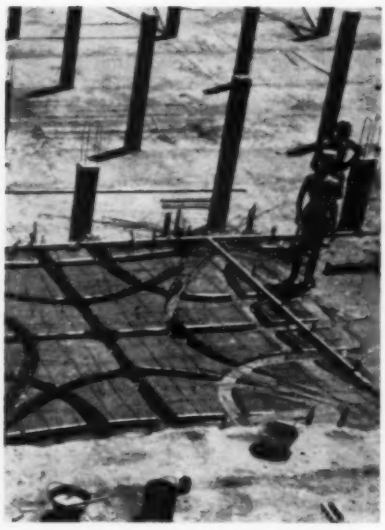
come temporary critical strains always fill me with wonder and admiration.

Although it is difficult to achieve an economical and permanent concrete structure which will remain youthful throughout the years, I shall make a few suggestions on how best to approach the goal.

My first and perhaps most fundamental suggestion is to create structures which are harmonious both in form and in the distribution of steel reinforcement. This quality, which may seem totally abstract and only esthetically important, has a deep correspondence with the physical reality of the structure. As I pointed out above, because of its inherent and unavoidable continuity, a concrete structure is an organism in which stresses spread from one element to another so that all together they withstand the internal or external forces menacing its stability. Almost always these forces are not only those considered as loads in the computations, but also those deriving from shrinkage, thermal variations, and yielding of the supports.

This complicated state of stress in the structure creates singular regions where stress concentrations are bound to arise as soon as the various elements are not well proportioned. Stress concentrations in turn are responsible for both capillary and large cracks. Hence, we must avoid all dimensional discontinuities between adjacent elements and substantial differences in the steel content of the sections of a member or adjacent members.

The steel reinforcement of a complicated structure should be so designed as to form in itself a stable structure capable qualitatively of sustaining the load. The added concrete should then be capable of implementing the equilibrium quantitatively, by connecting the steel bars and by absorbing compressive stresses. The pattern of steel should always have an esthetic quality and give the impression of being a nervous system capable of bringing life to the dead mass of concrete.



THE MOST SPECIFIC characteristic of concrete which usually determines its structural behavior and makes it so difficult to analyze, is the remarkable variability of its stress-strain ratio — that is, its imperfect elastic behavior.

In the first place the elastic modulus of concrete varies due to the problems inherent in mixing, placing and curing. Secondly, the elastic modulus changes due to plastic stresses and the strains or yielding under constant load (viscosity). The structural consequences of these two sets of causes are substantially different.

The first type of variability only gives trouble when it causes the elastic modulus of concrete to differ in two collaborating members of the same structure.

The changes in the elastic modulus due to the second set of causes, including the decrease of the modulus with stress, its increase under repeated loading, and its plastic flow under load, is of greater structural importance.

Due mainly to plastic flow, a concrete structure tries to adapt itself with admirable docility to our calculation schemes, which do not always represent the most logical and spontaneous answer to the requests of the forces at play, and it even tries to correct our deficiencies and errors. Sections and regions too highly stressed yield and channel some of their loads to other sections or regions which accept this additional task with a commendable spirit of collaboration within the limits of their own strength.

What are our present chances of understanding and of mastering such complicated phenomena? At present their qualitative and quantitative determination is out of our grasp. A designer bold enough purposely to increase or decrease the plasticity of certain concrete elements, contributing with others to the strength of the same structure, does not have quantitative data that can lead him to even roughly approximate results. In practice, the importance of this data would be fundamental. For example, by increasing the plasticity of certain parts of fixed arches the pressure resultant due to the dead load could be centered at all sections, thus resulting in great economy for these structures, in which live load is of minor importance.

THE FUNDAMENTAL IDEA behind the new reinforced concrete material Ferrocemento which I have developed is the well known fact that concrete sustains large strains in the neighborhood of the reinforcement, and that the magnitude of the strains depends on the distribution and subdivision of the reinforcement throughout the mass of concrete. With this principle as a starting point, I asked myself what would be the behavior of thin slabs in which the proportion and subdivision of the reinforcement were increased to a maximum by surrounding layers of fine steel mesh, one on top of the other, with cement mortar.

The square mesh was made out of ductile steel wires 0.02 to 0.06 in. diameter, set 0.4 in. apart. The mortar was made of 0.6 to 0.75 lb of cement to the cubic foot of good quality sand. The slabs were very thin but extremely flexible, elastic, and strong.

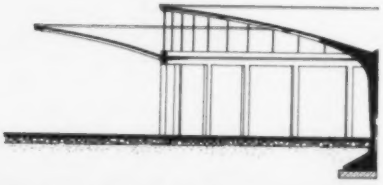
Later on, in order to increase the thickness and the strength of the slabs without using more than 10 to 12 layers of mesh, I tried inserting one or more layers of steel bars 0.25 to 0.4 in. in diameter between the middle layers of mesh, thus attaining thicknesses of 2.5 to 4 in.

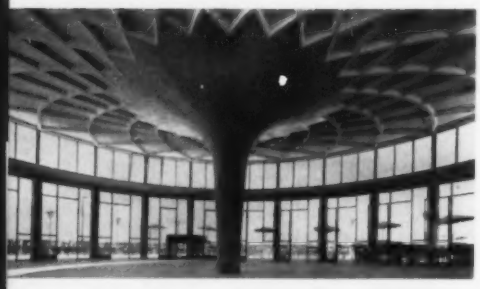
The material thus obtained did not behave like regular concrete, but presented all the mechanical characteristics of a homogenous material.

Experiments with the new material demonstrated immediately its most important and fruitful properties: absence of cracks in the cement mortar even with a large amount of strain because of the subdivision of the reinforcement; and elimination of forms since the mesh acted as a lath to retain mortar.

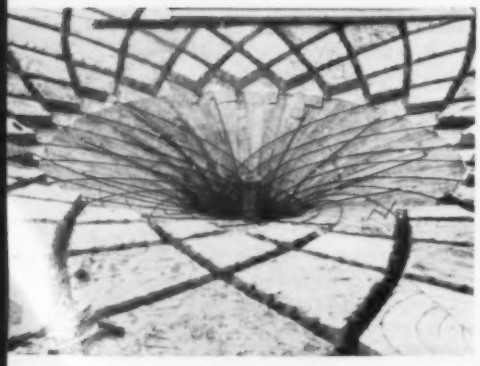
During the last few years I have constructed buildings in which Ferrocemento was not only conveniently and interestingly applied, but also was a decisive design factor both technically and architecturally.

The most important of these applications is the large undulated shell of the central hall of the Turin Exposition Building, which spans 300 ft. The shell is built with prefabricated elements of Ferro-cemento, connected by reinforced concrete arches at the top and the bottom of the undulations.





A highly expressive geometric pattern was formed in the ceiling of this restaurant designed by A. La Padula through a refinement in Nervi's prefabrication techniques. Precast, coffered sections, about 1-in. thick were assembled on a platform with spaces left between for reinforcing of the stiffening ribs



REINFORCED CONCRETE is the most revolutionary material of our entire building history. The essence of the revolution consists in the possibility of realizing structures in perfect conformance to statical needs and visually expressive of the play of forces within them.

The most elementary structural elements acquire new and expressive interest. Beams lose the prismatic rigidity of wooden struts and of standard metal sections, and may plastically follow the variations of stress. Columns free themselves from the constant cross-section of stone and masonry pillars. Three-dimensional structures, like domes and barrels, acquire a freedom of form unknown to masonry.

The full development of reinforced concrete depends partly on the mental development of the designer, who must consider the concrete structure as the materialization of the most efficient structural system, but also on the refinement of construction procedures. Through study of these construction methods the rigidity of wooden forms can be eliminated, allowing the economic realization of curved surfaces and elements of variable cross-section, as required by the flow of stress.

Architecturally and structurally, concrete is promising in the field of skin-resistant structures, that is, those structures whose strength is a direct consequence of the curvatures and corrugations of their surfaces.

We cannot deny that the practical realization of large form-resistant structures presents great design difficulties. These theoretical difficulties are, in my opinion, neither unsurmountable nor great. Not only is the theory of structures being continuously developed, but even today we can solve satisfactorily the most complicated structural problem by experimental stress analysis. The real difficulty to be overcome is the general lack of intuitive understanding about the structural behavior of these resistant systems, and the difficulty of communicating such intuitive knowledge to others.

The many examples of form-resistant structures such as flowers, leaves, sea shells, etc., are either too small in scale to involve the weight of our body or the strength of our muscles, or, being decorative, do not suggest a direct structural experience. Other examples of form-resistant structures, like automobile bodies, airplane wings, and ship hulls, polarize our attention exclusively towards mechanical systems and, hence cannot be translated easily into civil engineering structures. Thus resistance due to form, although the most efficient and the most common type of resistance to be found in nature, has not built yet in our minds those subconscious structural intuitions which are the basis of our structural schemes and realizations. In other words, we are not yet used to thinking structurally in terms of form.

HOW CAN WE DEFINE and limit the technical potentialities of a material which in fifty short years has conquered the most varied fields of construction? Its structural limitations are hard to foresee. Although our knowledge of concrete is anything but complete, we are already capable of building concrete bridges spanning over 1000 ft (a few years ago Freyssinet designed a bridge spanning over 3000 ft), thin shell barrels and domes spanning over 1000 ft, framed structures for very tall buildings and dams capable of withstanding the pressure of many hundreds of feet of water.

When the actual behavior of concrete under load and in time is better known, when laboratory practices capable of producing 14,000-psi concrete are commonly applied in the field, and when plastic redistribution of stress in complicated structures is foreseeable, the amazing results achieved so far will be easily surpassed.

The shape of things to come is clearly illustrated by the construction of airplane wings of prestressed concrete designed by Freyssinet and built by the Brequet Co. (*See Technique et Science, Aeronautique*, October, 1953). An actual *flying stone* has been realized. What else are we to expect from such a wonderful structural material?

Planks of expanded polystyrene enclose this 8-room house. Laid in parallel courses, they were joined by wooden pegs, inserted by hand

INSULATION BECOMES LOAD-BEARING

INSULATION IS DOING DOUBLE DUTY in a 3200-sq ft ranch-style house just outside of Houston, Texas. Planks of expanded polystyrene are providing not only insulation and a vapor barrier but also almost complete enclosure of the four-bedroom house: walls, roof and even some floors.

The major component of the plastic house is a *Styrofoam* board 9 ft by 12 in. by 3 in. The boards are laid in parallel courses within the wood formwork, with all joints staggered and tightly butted, to form the walls of the house. Treated wooden pegs, which can be inserted by hand, are pushed into the bubble-filled planks to "nail" them together. Vertical seams are filled with a black waterproofing compound, which can be seen in the photograph at right.

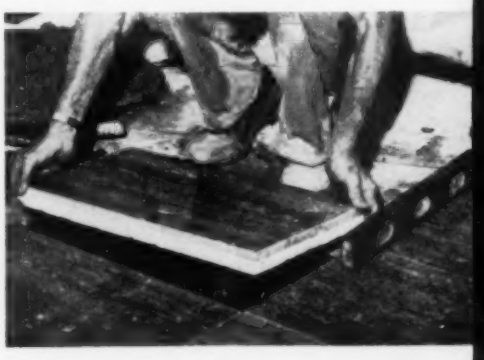
This installation procedure alone does not provide a structural wall, however. Although the strength of the expanded polystyrene planks is such that it can support dead loads like concrete floors, it will not in all likelihood be able to take the loads usually inflicted on a bearing wall. This one inadequacy was corrected by coating the plastic walls on both sides with cement. First the walls were prestressed by stringing wires from ceiling to floor, as can be seen in the photograph at the right, and pulling them taut. Then the walls were sprayed with a 1-in. coat of stucco cement on the outside and a 1-in. coat of cement plaster on the inside, making a 5-in.-thick wall.

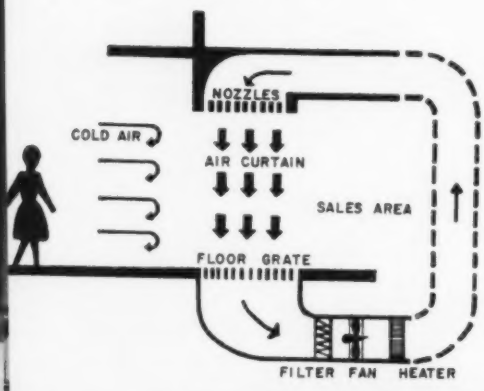
The 4-ply, built-up roof is covered with Styrofoam planks which are 18 in. high instead of 12 in. They are overlapped, and coated with ¼ in. of Portland cement. Even part of the flooring is plastic plank! In two rooms, ⅝-in.-thick marble slices bonded to Styrofoam blocks provide a marble floor which has two major advantages: it costs about one-third of what regular marble flooring costs, and the marble itself remains at room temperature because of the insulating effect of the plastic base.

The house is designed to withstand a uniform wind load of about 70 psf or, according to owner-builder Dean Emerson, a 200-mph gale. In addition, it has a high built-in insulation factor, will not burn easily, will not absorb moisture and is inert, so is resistant to rot and vermin. One of the most attractive advantages of the plastic house, according to Mr. Emerson, is its cost. He estimates that construction costs are 10 to 15 per cent less than they would have been for a house with the same advantages built with conventional material. Part of the cost savings results from the ease of handling of the lightweight planks. Each weighs only 4½ lb and can be cut easily with either a saw or a knife. Operational costs are lower too. Because of the insulating values of the house, it can be heated with an 80,000-Btu unit instead of the 150,000-Btu size which would be necessary in a normal house of this size, and cooled with a 3-ton unit instead of a 5-ton unit.

Architect of the Emerson house was Wilson, Morris & Crain, Houston. Francis J. Niven was the consulting engineer. *Styrofoam* is produced by Dow Chemical Co., which is conducting its own research program on the use of the plastic as a loadbearing member.

Styrofoam walls were prestressed by wires strung from ceiling to floor, then were strengthened with 1 in. of sprayed cement on both sides. On some floors marble slices were bonded to Styrofoam





Swiss department store entrance is air curtain by day (above), by night a showcase (below) raised from basement

AIR: IT'S THE LATEST THING IN "DOORS"

INDOOR-OUTDOOR LIVING has received another boost — an *Air Curtain* door, especially useful for stores, which acts as an insulating wall that can be penetrated only by solid bodies.

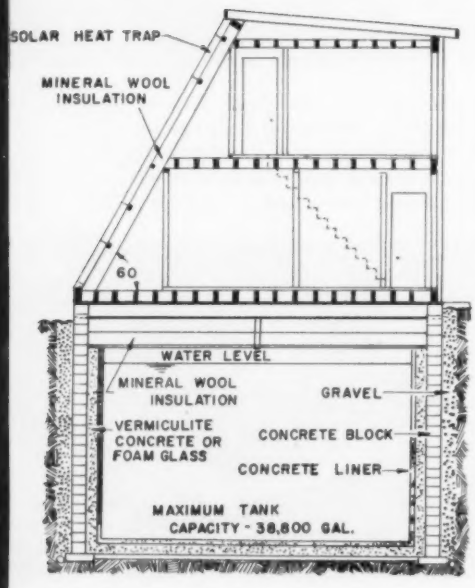
The diagram at the left shows how the *Air Curtain* operates. Air from a plenum chamber is discharged downward in vertical curtains or layers by a number of nozzles. It is returned through a floor grille into a pit, where most of the dust and foreign matter is removed, and then blown back into the plenum chamber. The pit is sprayed with water periodically to eliminate all possible fire hazards and flush out the light dirt.

The multiple curtains of air provide a hermetically sealed opening which cannot be penetrated by insects, dust, wind or rain. Air delivery from the discharge nozzles is variable, to counteract changing pressures and winds, and can be controlled automatically or manually. The air nozzles are also directional, so that they can spill air either outward, to keep the entrance clean and dry, or inward for ventilation. This last advantage is particularly desirable in stores which have been closed over a week end, in that it provides a speedy method of freshening of the air. The air can be either heated or cooled before delivery, depending on the effect desired. It is said that it gives the sensation of a "gentle breeze" at head level. Even when used at maximum velocity during high winds, it is not objectionable, as it is approximately half that of the wind.

The cost of the *Air Curtain*, according to the manufacturer, is slightly higher than conventional closures, averaging about $1000 per foot width of opening completely installed. It is contingent on various design factors, the most important of which is exposure. Costs drop somewhat as width increases, since the blower and motor sizes remain the same. Advantages claimed for the system are that cleanliness is improved, valuable floor space is saved by the elimination of vestibules, and personnel and customer comfort is improved.

The first installation in this country of the *Air Curtain* was in a Kroger supermarket in Dillonvale, Ohio. Three blowers, operated by a 5-hp variable-speed motor, furnish 12,000 cfm air delivery. Heat is furnished by a gas-fired unit heater. The entrance, protected by a pylon and canopy, faces south and is subject only to mild winds. Night closure consists of three swinging doors. Architect of the store was Betz and Bankemper.

UNIVERSITY OF TORONTO PLANS A SOLAR-HEATED HOUSE



CANADA may have a solar-heated house soon.

The University of Toronto Mechanical Engineering Dept., under the direction of Prof. E. A. Allcut, has been experimenting with solar energy applications for several years, collecting data on efficiency of glass collectors and on performance under varying weather and temperature conditions. The next step — and it may happen soon — is the construction of a test house which, it is expected, will be operated through several full seasons.

The house which is being planned is a two-story, five-room house — well insulated, of course — in which the entire basement would be used as a 38,800-gal water reservoir. As shown in the section at left, the heat collector (it will probably be one or more sheets of glass and a blackened metallic plate separated by air spaces) covers the south wall of the house, which will be inclined at an angle of 60 deg to catch the maximum amount of sun. A pump will circulate water from the bottom of the storage tank, where it is coolest, through the collector, where it will be heated. The heated water will then circulate down through conventional recirculating blending valves to radiant coils in the floors, ceilings and some walls, which will provide a maximum heating surface for the house. The water will finally filter back to the reservoir. It is estimated that such an extensive heating surface will require a minimum water temperature in the radiant coils as low as 80 F when outdoor temperatures are −10 F.

(*More Roundup on page 280*)

SOME NEW EQUIPMENT AND FURNITURE FOR SCHOOLS

Desks for Bleachers. *Tablet Arms* which attach directly to bleacher seats by means of steel wing bolts make possible the utilization of gymnasiums as extra classrooms to relieve crowded classroom conditions. The portable arms, of hardwood and steel construction, can be set up and removed by students and stored in portable steel racks. They are produced for either right-hand or left-hand use. A *Gymnasium Seating Capacity Calculator*, a handy, pocket-size plastic slide rule, is also available from the manufacturer, *Universal Bleacher Co., Champaign, Ill.*

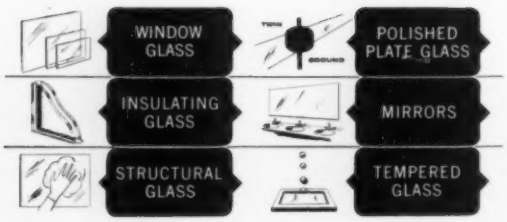
Lightweight Movable Wardrobe for additional clothing storage in crowded classrooms is also functional as a room divider or as a bulletin board. The wardrobe provides storage for 24 coats by means of 12 fixed hangers and 12 hooks mounted on a bar-and-rack arrangement which adjusts for height within an 8-in. limit. In addition, a full-length wire rack above the overshoe storage space provides for lunch storage. Structural members are metal on honeycomb core. The back panel, which doubles as a bulletin board when it is turned toward the class, is of corkboard. Color is sage gray. Dimensions are 21⅞ in. deep by 47½ in. wide by 54½ in. high. The unit moves easily on full-swivel casters, but it is also available with full-length metal or island-type base. Where hardware is required, metal meets metal. *The Brunswick-Balke-Collender Co., 623 So. Wabash, Chicago 5, Ill.*

Multi-Purpose Classroom Cabinets, easily movable for use in unlimited combinations and groupings, feature laminated surfaces on both the exterior and the interior. Especially designed for kindergarten and elementary grade classrooms, the cabinets provide a smooth, firm surface for all classroom activities and resist the destructive impulses of lower-grade pupils. Produced in 24- and 36-in. heights, they are styled with plastic nub linen patterns in red, green, blue and yellow. Each unit has an offset base for foot room. *National School Furniture Co., Odenton, Md.*

Nursery Bowl is a vitreous china, flushometer bowl designed specifically for kindergarten and nursery school installations. The rim of the bowl is only 10 in. high. Available colors, besides white, are yellow, blue, pink, green, gray, tan. *Universal-Rundle Corp., New Castle, Pa.*

Plastic and Chrome-Steel Desks have chair seats and backs and desk tops of homogeneous solid plastic on legs of chrome-plated tubular steel. Available in a variety of models and in graded sizes ranging from kindergarten through college requirements, the *Trim-Line* units are said to withstand hard use and abuse, even powerful acids, with a minimum of maintenance. The *Hey-Woodite* plastic, which needs no refinishing, comes in five colors, with book boxes available in five harmonizing shades. The illustration at right shows a hinge-top desk. Open-front desks are also produced. *Heywood-Wakefield Co., School Furniture Div., Gardner, Mass.*

(*More Products on page 298*)



GLAZING SPECIFICATIONS

School Glazing Specifications is a work sheet which contains suggested specifications for *LOF* and *Blue Ridge* patterned glass products frequently used in school buildings. In addition, it includes a cutaway drawing of a typical school building, with space provided for filling in glass specifications for each area, and illustrates specialty uses, as shown at left. The 6-page, 8½- by 11-in. folder was designed to fit into and become a part of a school project job file. Copies of Form M-28 (AIA File 26-A) may be obtained from *Libbey-Owens-Ford Glass Co., Toledo 3, Ohio,** or from its district offices.

Wall Tile. Applications and design data on porcelain on aluminum, enamel on aluminum or steel, clear enamel on polished copper, polished stainless steel and plastic tile are presented in a 4-page brochure (AIA File 23-F) from *Vikon Tile Corp., Washington, N. J.*

Single Handle Mixing Faucets and Valves are covered in a 4-page brochure which gives information on roughing-in dimensions, mechanical construction and special uses. (AIA File 29-H-5) *Moen Valve Co., 6518 Ravenna Ave., Seattle 15, Wash.**

Nurses' Call Equipment. A combination two-way intercom system and light signal for use in hospitals is presented in a 4-page brochure from *DuKane Corp., St. Charles, Ill.**

Office Furniture. Desks, tables, cases and cabinets are cataloged, with dimensions, in a folder from *The Bentson Mfg. Co., Aurora, Ill.*

Architectural Aluminum Doors, Frames and Entrances is the title of a 12-page booklet which presents installation photographs and details and also information on special pushes and pulls, power operators, power devices and standard hardware. (AIA File 16-E) *Variety Mfg. & Engineering Co., 810 W. Fulton St., Chicago 7, Ill.*

Sliding Glass Doorwall Frames. Charts, which contain diagrams of 18 models, will guide selection and specification. Cross section details are also included in a 4-page brochure (AIA File 16-E) from *Steelbilt, Inc., 18001 So. Figueroa St., Gardena, Calif.**

Glazed Facing Tile. A 24-page booklet contains product and application information, a color chart and tables of shapes and dimensions. *Stark Ceramics, Inc., Canton 1, Ohio.**

Floor-Laying System by means of which wood floors can be laid on concrete slabs without the use of wood sleepers, wood subfloor, adhesives or nails is discussed in an 8-page brochure from *Loxit Systems, Inc., 1217 W. Washington Blvd., Chicago 7, Ill.**

Porcelained Enamel Panels in school construction are presented in Data File 300 (AIA File 15H-2), which includes photographs, technical data and architectural drawings on four basic types of installations: double-faced, single-faced, *Vision-Vent* type and corrugated porcelain enameled aluminum panels. *Ingram-Richardson Mfg. Co., Beaver Falls Pa.**

Mouldings and Trim, an 8-page brochure (AIA File 19-E-3) which presents scaled design details and specifications, is the eighth in a series of brochures released by *Architectural Woodwork Institute, 332 So. Michigan Ave., Chicago 4, Ill.*

Ironbound Continuous Strip Maple Floors, consisting of special tongue and groove sections embedded in mastic with sections interlocked by sawtoothed steel splines, are discussed in a 4-page folder (AIA File 19-E-9) from *Robbins Flooring Co., Reed City, Mich.**

Better Daylighting for Schools *with Translucent, Light Diffusing Glass by Mississippi* is the title of an 8-page brochure (AIA File 26-A-3,5,6) which includes research data, installation photographs and transmission data. *Mississippi Glass Co., 88 Angelica St., St. Louis 7, Mo.**

Chalkboards. *Korok* porcelain-on-steel chalkboards for classrooms are discussed in a 4-page folder which contains details, specifications and installation instructions. (AIA File 35-B-1) *The Enamel Products Co., Korok Div., 341 Eddy Rd., Cleveland 8, Ohio.**

Bituminized Fibre Pipe products, including sewer pipe, perforated pipe and couplings, are listed in a new CEFCO catalog which also includes fittings and adaptors made of cast iron especially for use with fibre products. *The Central Foundry Co., Foot of Pacific St., Newark 5, N. J.*

Rust Prevention is the subject of a 1956 catalog which includes 102 color chips showing the many *Rust-Oleum* colors available in primers, short and long oil type coatings, oil field finishes, color group finishes, machinery and implement colors, Galvinoleum coatings, heat- and chemical-resistant coatings, and floor and deck coatings. Form No. 255 can be obtained from *Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill.**

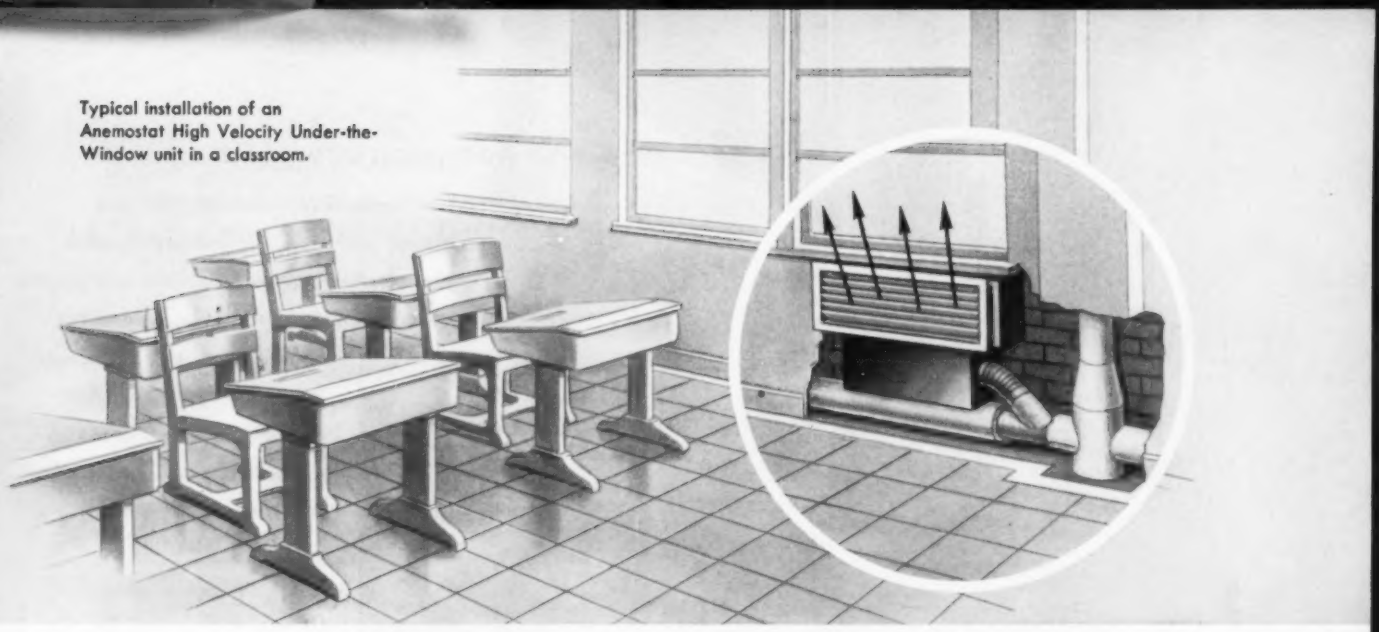
Speedwalk Passenger Conveyor is discussed in an 8-page bulletin which includes photographs of existing installations and design and application data. A *Carveyor,* which proposes to handle passengers in small cars, is also covered. *Stephens-Adamson Mfg. Co., Aurora, Ill.*

Malarkey Plywoods, Doors and Redwood Lumber are presented in a 32-page booklet which includes full-page illustrations showing grain and color with each discussion. (AIA File 23-L) *M and M WoodWorking Co., 2301 No. Columbia Blvd., Portland 17, Ore.**

Adhesives, Coatings and Sealers are tabulated in a catalog which shows characteristics, methods of application, color, base, solvent, solids content, net weight and company formula identification. Another table lists typical applications in major industries, including the building products industry. *Minnesota Mining & Mfg. Co., Adhesives and Coatings Div., 411 Piquette Ave., Detroit 2, Mich.**

Other product information in Sweet's Architectural File, 1956.

(Continued on page 354)



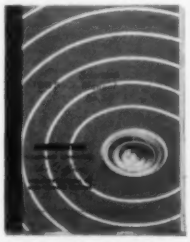
Typical installation of an Anemostat High Velocity Under-the-Window unit in a classroom.

How to deliver high velocity air to schoolrooms

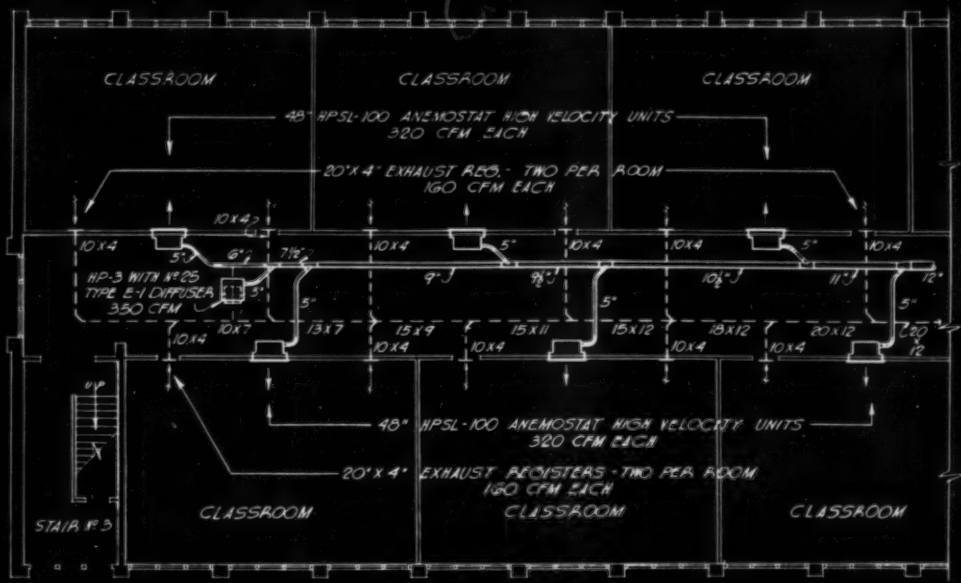
Shown here are two ways of using the Anemostat All-Air High Velocity system of draftless air distribution for heating and ventilating schools. Under-the-Window units (above) are the most practical for colder climates. Corridor distribution (below) is preferable in warmer climates.

Advantages:

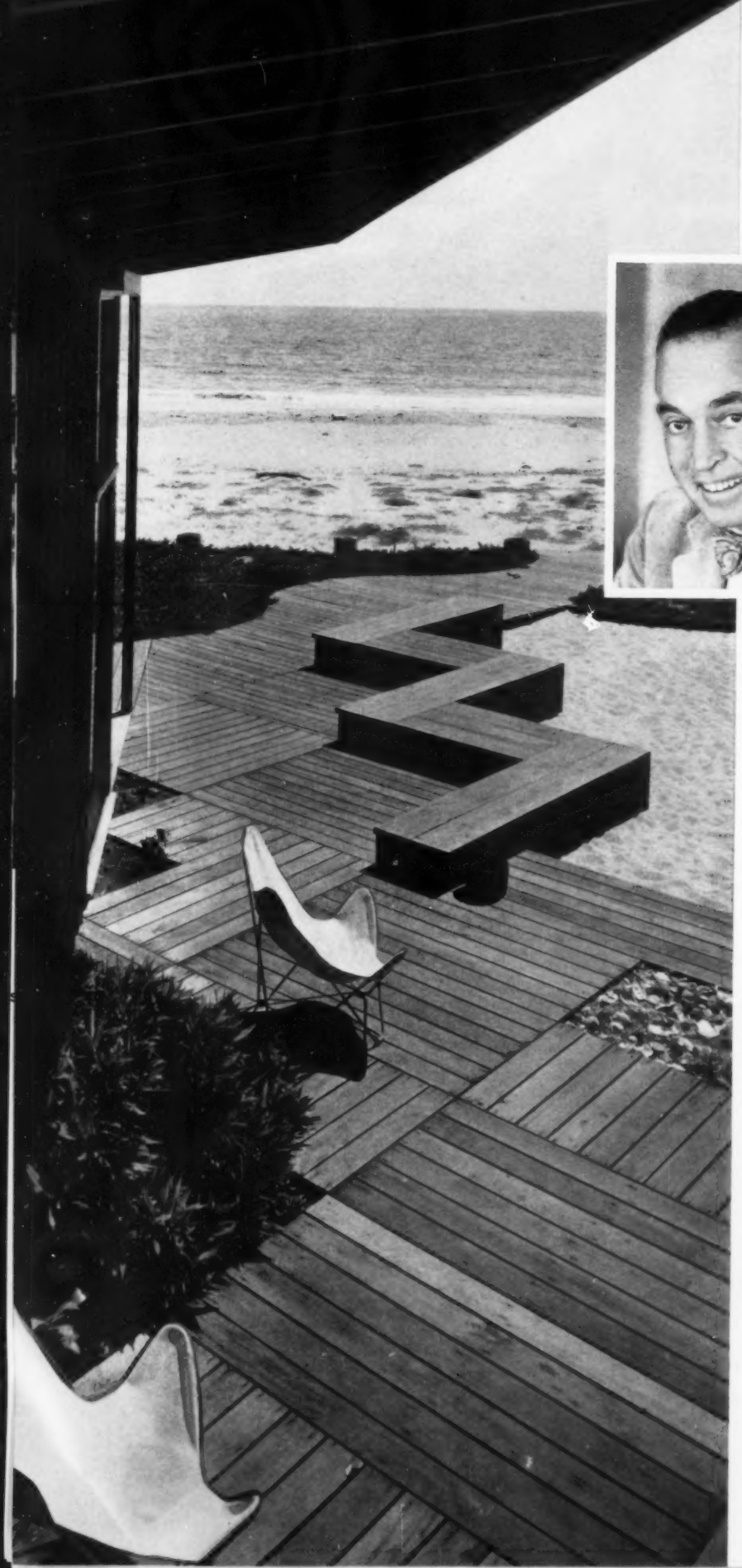
- All-Air High Velocity units require smaller than conventional ducts, thus save space and money.
- All-Air HV units can be used for individual or zone control, in single or dual duct installation.
- Since air is supplied from the main equipment room, there is no need to break through the outside of the building for prime air make-up. This eliminates grilles, dampers, possibility of leaks.
- The Anemostat All-Air HV system can be simply installed by the sheet metal trades. No supply or return pipes are required. Units are quiet, need a minimum of maintenance from custodians.



For latest data on All-Air High Velocity units, write on your business letterhead for new Selection Manual 50 to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.


CLASSROOM
CLASSROOM
CLASSROOM
48" HPSL-100 ANEMOSTAT HIGH VELOCITY UNITS 320 CFM EACH
20"X4" EXHAUST REG. - TWO PER ROOM 160 CFM EACH
HP-3 WITH № 25 TYPE E-1 DIFFUSER 350 CFM
48" HPSL-100 ANEMOSTAT HIGH VELOCITY UNITS 320 CFM EACH
20"X4" EXHAUST REGISTERS - TWO PER ROOM 160 CFM EACH
STAIR № 3
CLASSROOM
CLASSROOM
CLASSROOM

Diagrammatic layout shows corridor distribution of high velocity air for wing of school.



THOMAS D. CHURCH,
leading landscape architect for over twenty years, has done outstanding work for private estates and subdivisions, hotels and schools, industrial plants and government agencies, both here and abroad. Well known for his articles in *House Beautiful*, he is also the author of the new best-selling book, *Gardens are for People.*

Of Garden Redwood, Mr. Church says..."Used alone or in combination with other materials, redwood is one of my most versatile materials. By specifying the correct grade of CRA redwood, I can obtain the effect I want, every time."

Gardens are for people...just as houses are...and they should receive the same careful planning and material specifications as architectural structures. For design ideas, construction details, and data on Garden Redwood grades, write on your letterhead for our Landscape Architect's File.

CRA California Redwood

CALIFORNIA REDWOOD ASSOCIATION
576 SACRAMENTO STREET
SAN FRANCISCO 11, CALIFORNIA

FINE HARDWOODS FOR ARCHITECTURAL USES — 4

By Burdett Green, Executive Vice President, Fine Hardwoods Association and James Arkin, A.I.A., Consultant, Architectural Woodwork Institute

WALNUT, AMERICAN (*Juglans nigra*)

Better than 95 per cent of all walnut used in the United States comes from one genus, *Juglans nigra*, formerly referred to as American Black Walnut. The wood itself is not black but a light to chocolate brown, sometimes slightly purplish brown. In specifying plywood or veneers, it is not enough simply to indicate "Walnut," or even "American Walnut," because this one species is available in more different figure or grain types than any other wood.

Source: Grows throughout the United States and Southern Canada, but its commercial range is confined largely to some fifteen Central States

Color: Light gray-brown to dark purplish brown

Pattern: Plain to highly figured. Produces a greater variety of figure types than any other hardwood (approached only by mahogany): longwood (flat-cut; half-round; quarters, both plain and figured), crotches, swirls, stumpwood and occasionally burls. Four of the most readily available types are described below:

Plain Flat Cut—Comes in reasonably good widths, from 8 to 18 in., and occasionally in "half-round" to even wider stocks. Flitches (or individual stock) usually contain from 1200 to 1800 sq ft. In lengths, 9 to 10 ft predominate; however, fine architectural logs may be had up to 12 or 14 ft and occasionally to 16 ft long

Figured Flat Cut—Leafy grain character caused by annual growth rings is the same as in "plain flat cut," but, in addition, one or more types of "cross figures," "roll figure" or "mottle" appear, usually distributed more or less evenly over the face. Uniformity over large areas should not be expected, because the figure varies even within one log

Quartered Plain—The growth rings on the sides of flat cut walnut produce a quartered effect. By cutting out the leafy heart (flat) grain, pure quarters result. Certain large logs are often quarter-cut to give the entire sheet a stripe. Quarters, which come from only one-quarter of the log, are therefore much narrower in width, ranging from 5 to 10 in., mostly 5 to 8 in. However, panels of any width may be obtained by matching in either of two ways: book matching or slip matching

Quartered Figured—As explained above, a small percentage of the logs that may be quartered have "cross figure." When book-matched, they produce a "fiddle-back" effect. Other types of cross figure may be had by specifying "slightly figured quarters" or "highly figured quarters"

Characteristics: Moderately heavy; very strong for its weight, exceptionally stable. Even "plain" types are often characterized by dapples (pin knots, which are really not knots) and slight variations in color. When chosen for this informal character, the wood is described as "Enchanted Walnut"

Uses: Architectural woodwork; furniture

Availability: Veneer abundant. Lumber plentiful

Price Range: Medium to costly for highly figured types

WALNUT, CLARO (*Juglans hindsii*)—California Walnut

There is considerable confusion as to the exact species of *Juglans* that produces fast-growing Claro Walnut. Some authorities claim it comes from *Juglans regia*. (Photograph on Sheet 5.)

Source: California and southern Oregon, east of Coast Range

Color: Tannish brown with dark brown

Pattern: Wavy grain; prominent light stripes

Characteristics: Moderately heavy; hard; rather open-grained

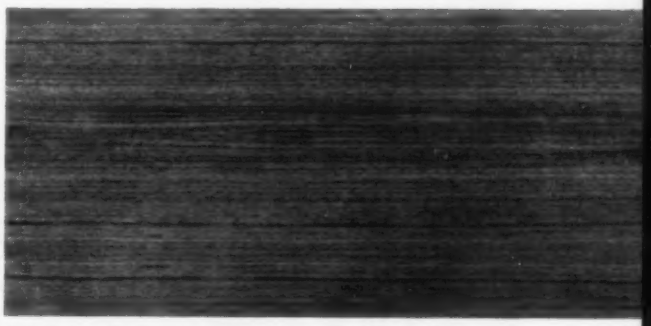
Uses: Highly decorative areas of fine furniture and paneled interiors

Availability: Quartered veneers rare. Lumber not available

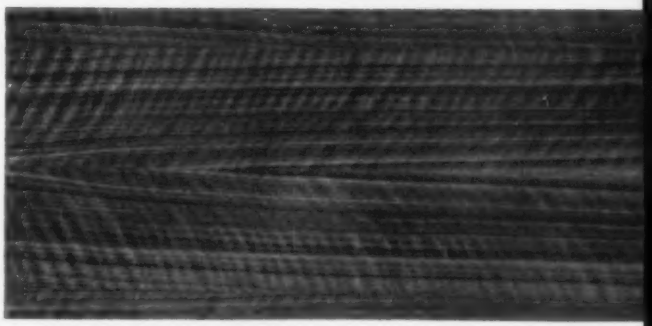
Price Range: Medium to costly

Walnut, American, plain flat cut (1 piece)

Walnut, American, figured flat cut (1 piece)



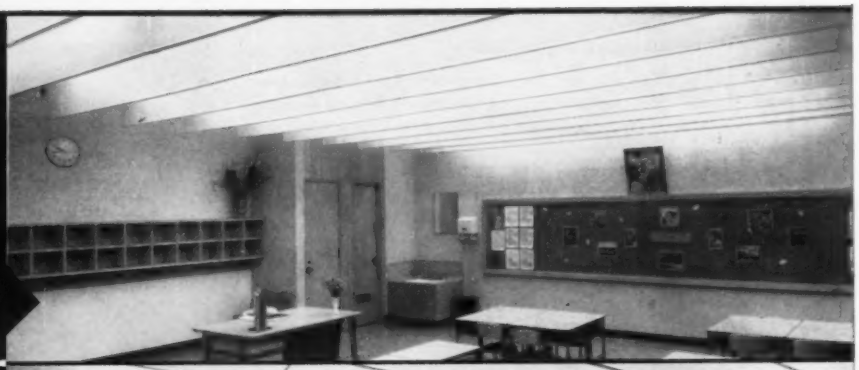
Walnut, American, quartered sliced (2 pieces, book-matched)



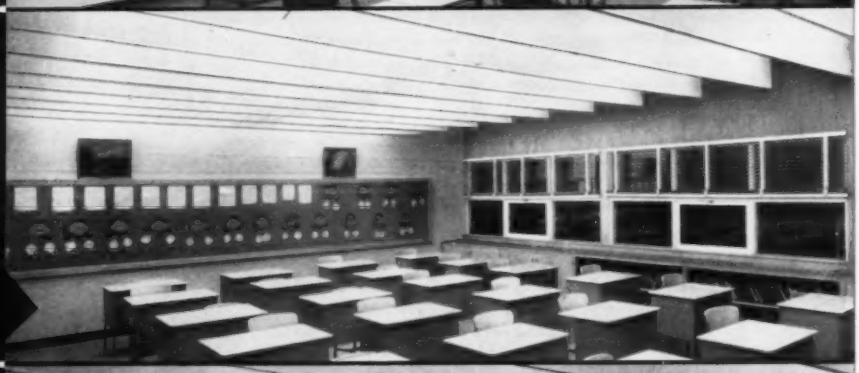
Walnut, American, quartered figured (2 pieces, book-matched)

saved: 62¢ per square foot

saved $560 on this room



saved $560 on this room



saved $560 on this room

plus $560 on each of 13 more HAWARDEN school rooms

THE sloped roof design of the new sixteen-room Hawarden, Iowa elementary school building would have required a false ceiling if standard suspended-type luminaires were installed on an accoustical ceiling. However, by installing the Curtis Light & Sound Conditioning System on various length hangers, architects Harold Spitznagel & Associates of Sioux Falls, South Dakota, not only provided the school with excellent low-brightness lighting and efficient accoustical treatment without extra construction work and expense, but they gave each room a level-ceiling look, *and* saved 62c per square foot too! For complete details on the Curtis Light and Sound Conditioning Systems in new or existing classrooms, write Department D3-LS.

CURTIS LIGHTING, INC.

6135 WEST 65th STREET
CHICAGO 38, ILLINOIS

IN CANADA:
195 WICKSTEAD AVENUE
TORONTO 17, CANADA

FINE HARDWOODS FOR ARCHITECTURAL USES—5

By Burdett Green, Executive Vice President, Fine Hardwoods Association and James Arkin, A.I.A., Consultant, Architectural Woodwork Institute

WALNUT, EUROPEAN (*Juglans regia*)

Although walnut grows rather widely (though sparsely) over most of the world, only a small amount is imported, and it is mainly from Europe. The European walnuts are all from the same genus, *Juglans regia*, or Royal Walnut. Each type normally takes the name of the country of origin. The most important are:

WALNUT, CIRCASSIAN

Source: Europe
Color: Tawny
Pattern: Variegated streaks of black or dark brown (these pigment streaks passing across the growth rings are typical of Circassian Walnut). Occasionally crotches and swirls
Characteristics: Not so strong or hard as American Walnut, but otherwise about the same properties
Uses: Woodwork; highly decorative furniture
Availability: Veneer rare. Lumber scarce
Price Range: Expensive

WALNUT, ENGLISH OR FRENCH

Source: England and France
Color: Soft and quite gray-brown; lighter in color than American Walnut
Pattern: Fine, smooth grain; less prominent growth lines than Circassian Walnut
Characteristics: Very much like Circassian
Uses: Same as Circassian
Availability: Scarce
Price Range: Expensive

WALNUT, PERSIAN

Persian Walnut is the wood of European-Asiatic trees. It is grown in many countries and marketed as English, Italian, Turkish, Bulgarian, Spanish, Austrian and Russian Walnut, according to locale or source

BUTTERNUT (*Juglans cinerea*)—White Walnut

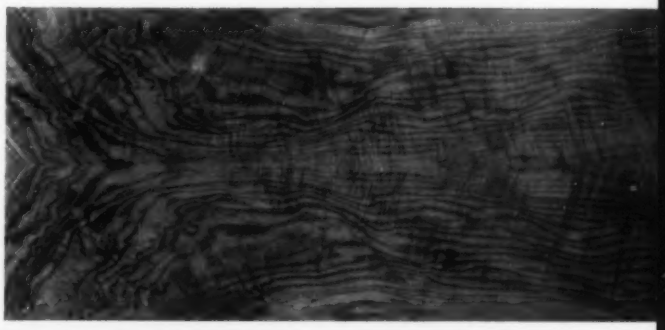
A true walnut.

Source: North Central States and Southern Canada
Color: Pale brown
Pattern: Satiny wood with leafy grain
Characteristics: Soft to medium textured, with occasional dark spots or streaks
Uses: Interior finish of houses; furniture
Availability: Veneer (sliced) and lumber somewhat more than "rare"
Price Range: Medium

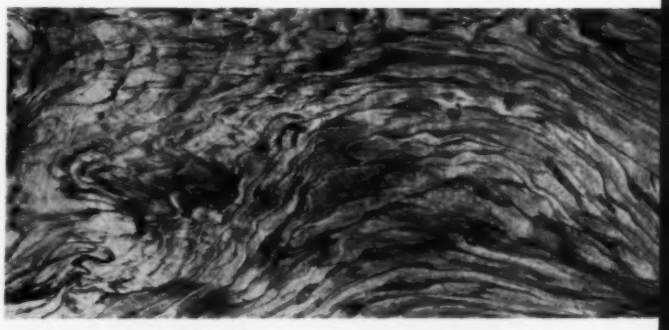
ORIENTALWOOD (*Endiandra Palmerstoni*)—Australian Laurel, Australian Walnut, Oriental Walnut; formerly "Queensland Walnut"

Although this wood was introduced into America in the late 1920's as "Oriental Walnut," it is not related to the walnut family (see botanical names).

Source: Australia
Color: Pinkish-gray to brown
Pattern: Somewhat like plain quartered Claro Walnut but with dark stripes and even broader ones
Characteristics: Medium weight; turns and polishes well; firm to hard
Uses: Furniture; cabinetry
Availability: Veneer (quartered) scarce
Price Range: Costly



Walnut, Claro, flat cut (2 pieces, book-matched)



Walnut, Circassian (one piece)

Butternut, plain flat cut (1 piece)

Orientalwood (2 pieces, book-matched)

When the special requirements of the huge, $14 million Army Finance Center emerged from planning, reinforced concrete was selected by the Corps of Engineers, U. S. Army, as the best method of structural framing.

Reinforced concrete was found to be more economical than other structural materials . . . erection progress more rapid . . . maintenance costs were estimated to be less . . . and it proved to be the most adaptable medium for such a low, spread-out structure.

Reinforced concrete is the ideal material for structures of practically all types and shapes. It provides rugged strength that is highly resistant to wind, shock, and quakes, and is firesafe without extra treatment. Furthermore, it permits great flexibility of design, and materials and labor are readily available from local areas. On your next job, it may well pay you to *design for reinforced concrete.*

ARMY FINANCE CENTER

Army Finance Center, U. S. Army
Indianapolis, Indiana
Corps of Engineers, U. S. Army
Chicago District

"REINFORCED CONCRETE is more economical... faster to erect... less costly to maintain"

GENERAL CONTRACTORS
Sherry-Richards Construction Co., Chicago*
Corbetta Construction Co., Inc., New York City
James McHugh Construction Co., Chicago
Wilcox Construction Co., New York City

*Construction and supervision by Sherry-Richards, sponsor of joint venture.

Compare...

YOU'LL SAVE WITH REINFORCED CONCRETE

38 South Dearborn Street • Chicago 3, Illinois

CONCRETE REINFORCING STEEL INSTITUTE

FINE HARDWOODS FOR ARCHITECTURAL USES — 6

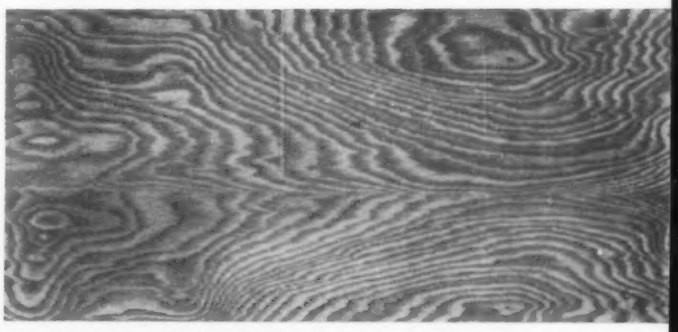
(To be continued in a later issue)

By Burdett Green, Executive Vice President, Fine Hardwoods Association and James Arkin, A.I.A., Consultant, Architectural Woodwork Institute

ASH, AMERICAN

There are many American species of ash, but the three major commercial ones are, in order of importance:

ASH, BLACK (*Fraxinus nigra*)—Brown Ash, Hoop Ash, Swamp Ash
Source: Principally the Lakes States
Color: Warm brown heartwood with a thin white or light brown sapwood
Pattern: Clusters of eyes occasionally scattered over plain wood
Characteristics: Extremely stable; heavy; rather soft; tough
Uses: Veneer for faces of decorative plywood; lumber for solid plank wall panels and for chairs, especially bent frames
Availability: Veneers (largely rotary, rarely burls) rare to plentiful
Price Range: Medium

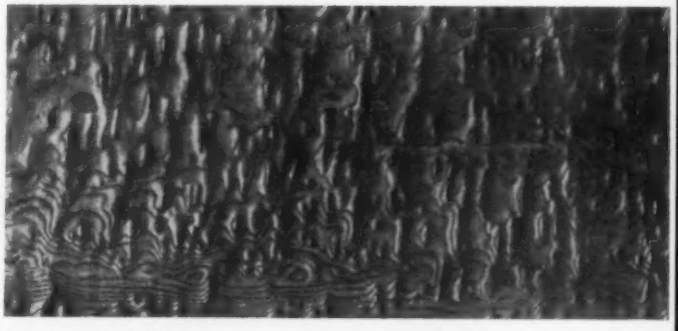


Ash, Brown (2 pieces, book-matched)

ASH, GREEN (*Fraxinus pennsylvanica lanceolata*)—Swamp Ash, Water Ash; lumber sold as White Ash
Source: Principally South Atlantic States and Mississippi Valley
Color: Cream to very light brown heartwood with thick, lighter colored sapwood
Pattern: Both flat-cut and quartered; moderately open grain
Characteristics: Heavy; hard; strong; medium-grained; tough
Uses: Interiors; furniture
Availability: Largely for commercial veneers
Price Range: Medium

Ash, White (2 pieces, book-matched)

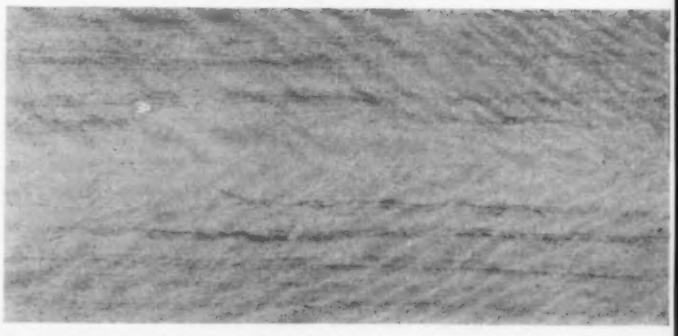
ASH, WHITE (*Fraxinus americana*)
Source: Principally Lakes States, also New England and Central States
Color: Cream to very light brown heartwood with thick, lighter colored sapwood
Pattern: Both flat-cut and quartered; moderately open grain
Characteristics: Heavy; hard; strong; medium-grained; tough
Uses: Interiors; furniture
Availability: Veneer (quartered, sliced, half-round, rotary) plentiful, (butts and figured sliced), rare. Lumber plentiful
Price Range: Medium



Ash, Japanese (1 piece)

ASH, JAPANESE (*Fraxinus sieboldiana*)—Damo, Tamo
Source: Japan
Color: Brownish-tan through gray to almost white
Pattern: Plain to highly varied with swirls, fiddle-back mottle and a "peanut shell" figure. Extreme grain character
Characteristics: Bends easily; lighter weight than American and European Ash; glues well; finishes well; strong for its weight
Uses: Decorative interiors and furniture; inlays and overlays
Availability: Veneer (half-round) scarce
Price Range: Costly

AVODIRE (*Turraeanthus africana*)—Apaya
Source: African Gold Coast, Ivory Coast (Liberia, Cameroons)
Color: White to creamy gold
Pattern: Largely figured with a mottle; crotches and swirls
Characteristics: Medium texture; firm, clean grain; usually wavy or irregularly interlocked; lustrous; moderately hard; weighs about the same as African Mahogany
Uses: Architectural panels; furniture; fixtures
Availability: Veneer (quartered, sliced, half-round) plentiful, also crotches and swirls. Lumber available
Price Range: Moderate



Avodire, rope figure (2 pieces, book-matched)

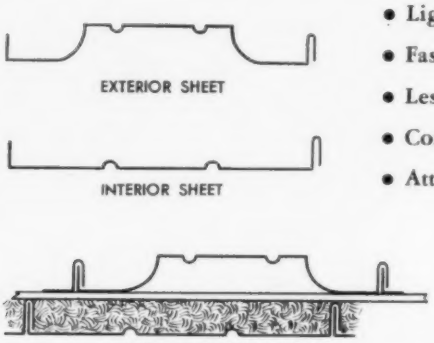
For rapid construction plus eye appeal . . .

specify NEW

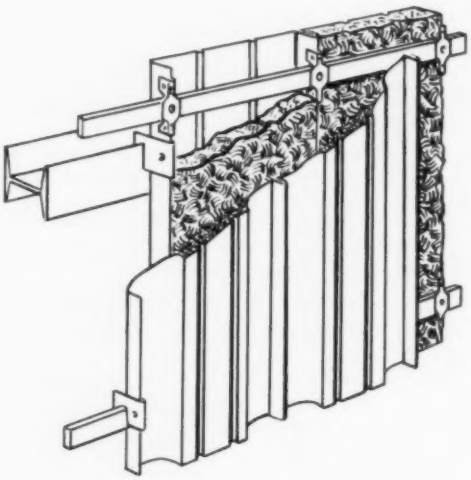
STRAN-STEEL CURTAIN WALL

Now your buildings can have structural soundness as well as a fresh, attractive appearance with Stran-Steel curtain walls. Exclusive *Stran-Satin* finish gives you a satin-smooth, highly decorative surface and the added protection of a non-corrosive zinc coating. And, of course, the eye appeal of these *Stran-Satin* panels is combined with the low cost and extra strength that only steel can offer. For wall or fascia construction in all types of public buildings, specify Stran-Steel curtain wall.

Stran-Steel curtain wall panels offer these advantages . . .



- Light framework
- Fast, easy to assemble
- Less heat loss
- Complete wall insulation
- Attractive appearance



56-SS-14B

Stran-Steel Corporation
Ecorse, Detroit 29, Michigan

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Ecorse, Detroit 29, Michigan • A Unit of

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Cleveland 15, Ohio, 20950 Center Ridge Rd.
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N. Kansas City 16, Mo., 1322 Burlington
San Francisco 5, Calif., 215 Market St.
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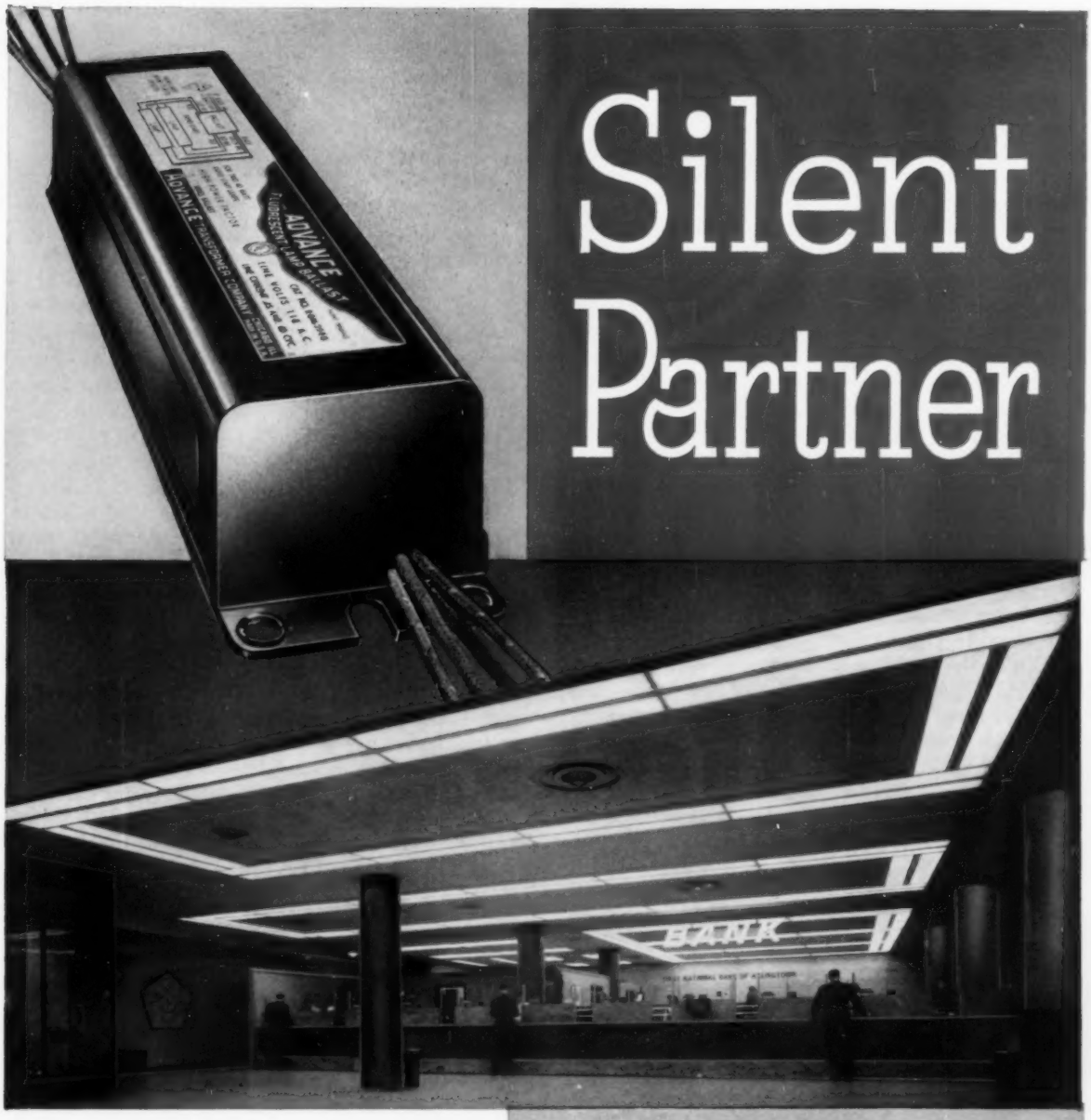


Silent Partner

Fluorescent lighting equipment manufacturers know the performance of their product is judged by the dependability of its silent partner . . . the fluorescent lamp ballast. That's why ADVANCE is preferred by leading manufacturers like Lighting Products, Inc. of Highland Park, Illinois, who chose ADVANCE ballasts for their new "Thin-Lite" luminaire, shown in the above installation. The performance and dependability which ADVANCE fluorescent lamp ballasts provide have made ADVANCE the world's largest exclusive ballast manufacturer.

Whether you manufacture, specify, install, use or maintain fluorescent lighting, your job will be easier if you make ADVANCE fluorescent lamp ballasts your silent partner.

The Heart of the Lighting Industry

First National Bank of Arlington, Virginia (Branch). Lighting installation supervised by Earl C. Douglass, Chief Electrician, Pentagon Bldg., Washington, D. C.

ADVANCE

CBM CERTIFIED

World's Largest Exclusive Manufacturer of Fluorescent Lamp Ballasts

TRANSFORMER CO.

2950 No. Western Ave. Chicago 18, Illinois

Let the ADVANCE nationwide network of service-stocking distributors be your partner too, in your ballast service needs. Write for complete details and name of distributor nearest you.

(Continued from page 202)

SERVICE AND OPERATIONS. On the bottom floor level are numerous services with no visitor or passenger access. A large catering kitchen, completely separated from that for the dining room and restaurant above, prepares meals for outgoing planes. There are two drives, one on the parking side of the building for service, mail and express trucks, the other on the apron side for tractors carrying loads to planes. Between these drives are the air mail, air freight, and cargo rooms. In this location these sorting rooms separate apron traffic from that on the outside and permit a smooth flow of mail and freight through them. This floor also contains the fan room for the air conditioning and heating systems; the boiler and cooling equipment are housed in a separate building. Along the field side of the lower floor are the operations offices of the airlines.

UNDERGROUND SERVICES TO PLANES. Gas trucks are eliminated from the apron area by a system for refueling planes from underground facilities. Standing planes will be cooled and heated through underground pipes; this also will help to reduce truck congestion on the airport apron.

STRUCTURE. From inside, the ceiling appears as a 412-ft-long barrel vault intersected by three cross vaults of equal height. However, from above, one sees three identical domes each forming an eight-sided figure, and they are joined (or separated) by a skylight kept flush inside and out. The reinforced concrete shells are 4¼ in. thick; the edges have peripheral and the groins diagonal rib stiffeners (18 x 20 in. and 18 x 45 in. at the crown respectively).[2]

Elmer Lange

Hedrich-Blessing

One of the hinges, four per dome, which carry the shells: under construction and with finish completed

These ribs were kept above the shell and are not visible from the inside. Hinged steel bearings receive the rib thrust; and structural steel ties (two 18 x 1 in. plates) were inserted in the upper floor spandrel beams around each 120-ft square. At the center of each arch is a 13-ft triangular roof overhang which is the natural geometrical form of the domical unit and lends the structure a unique esthetic effect. Reinforced concrete is used for the floors and framing of the rest of the structure. A 7-ft-wide concrete deck is cantilevered out from the upper floor level, serving as a window washer's access, and giving a strong horizontal to set apart the shells from the lower story.

MATERIALS. The vaults have glass fiber insulation on the outside surface covered with plywood to receive the copper-skin roof. A metal lath and acoustical plaster ceiling is hung from the shell on monel metal ties cast in the concrete. The floor at the passenger level is terrazzo, except in the restaurant area where the raised dining platform is carpeted. Asbestos vinyl tile is used for floors in the concessions and offices. Acoustical plaster to reduce the noise level of the Great Room, covers the entire underside of the large vaults. Heat absorbing glass is used in the vertical "walls" and in the skylights. The latter have a flush-fitting, translucent plastic interior covering to diffuse the light.

LIGHTING. The underside of the shell is lighted indirectly by color-corrected mercury vapor flood lights mounted on the metal-and-glass ticketing and concession kiosks or islands. The ceiling height in these islands is approximately 7 ft clear, to contrast with the 32-ft height of the dome. All construction on this top floor area was arranged to emphasize the shape of the vaults from below in order that the structure above would completely dominate the whole room. Skylights at the intersections of the vaults are lighted at night by fluorescent tubes concealed behind the light-diffusing plastic. This lighting will aid in dramatizing the overhead vaulting. The only direct lighting from above is a battery of spots over the stairs and escalators.

HEATING AND VENTILATING. The main public areas of the building are air conditioned with design for future expansion. Heating of the building is primarily by hot air with some convectors used in the offices and areas on the first two levels. Air is supplied to the Great Room from below the windows and from the roofs of the concession and kitchen areas, thus freeing the shell of all ductwork. The terminal building contains only fan rooms for the distribution of the heated or cooled air; boilers and air-conditioning equipment are located in a separate building. Supply is through pipes in a connecting tunnel.

SITE PLAN. The terminal building is 550 ft from Natural Bridge Highway, and the area between the terminal and the road contains a landscaped park strip and parking space for 1,395 cars. Trees are dispersed over the lot, and covered parking for 55 automobiles is provided. A future helicopter field and cargo building are east of the parking area. To the west are the boiler and shops building and airlines service building.

The expanded plan provides a traffic circle and cloverleaf intersection on the proposed Mark Twain expressway. Additional parking for 2,000 cars will be provided across Natural Bridge Highway on city-owned land.

COST. The terminal building and utilities cost approximately $5.9 million dollars.

[2] *Some thin-shell engineers have questioned the exact role played by the large groin ribs. The intended purpose of the ribs is set forth in a paper by William C. E. Becker, Consulting Engineer, in the July 1955 issue of* Civil Engineering, *Vol. 25, No. 7, pp 430–433, "Intersecting Ribs Carry Concrete Roof Shell."*

SPECIFY SEAL-O-SAN®

GYM FLOOR FINISH

where fast action is a must!

This huge floor of Columbus (Ind.) High School has a lively, slip-resistant surface which officials term "perfect for high speed Indiana Basketball." McGuire and Shook, Architects.

Elkhart (Ind.) School City Officials chose Seal-O-San for use on the three playing floors in the world's largest high school gymnasium because this finish assured them of light, bright, naturally beautiful wood floors which are perfect for fast action games. Maurer and Maurer, Architects

FOR COACHES WHO WANT THE BEST POSSIBLE PLAYING SURFACE . . .

Action is the word for Seal-O-San! For there lies the difference between an ordinary sealer and the right sealer for gym floors.

All gym floors must be designed for *ACTION* . . . and the activities on those floors should be safe for the youngsters. Basketball is among the fastest sports played on the gym floor and to be played well the players must have confidence that pivots, fast breaks and all tricky footwork are safe, steady, sure . . . otherwise well organized team play becomes pure chaos with each team member looking out for his own skin.

All modern sealers provide a surface that is relatively easy to maintain. All to a degree, enhance the beauty of the wood. All are sold on performance. But, *only* Seal-O-San can give you the assurance of a really lively and safe floor for all types of fast action under nearly any condition.

Next time you must specify a seal for a gymnasium, be sure it will provide the ideal surface for fast action—specify Seal-O-San. *There is no "or equal."*

See our catalog in Sweet's — 13M.

The home court (Allen County War Memorial Coliseum) of the fabulous professional Zollner Pistons was once finished with another "good" sealer until extreme slipperiness made good basketball impossible. Then Seal-O-San was applied to the floor and it since has proven very helpful to the Pistons' fast action game. A. M. Strauss, Architect.

Adolph Rupp, famed coach of the University of Kentucky, recommends Seal-O-San to one and all as "the best floor finish." He insisted that Seal-O-San be the only finish used in his huge fieldhouse. J. T. Gillig, Hugh Meriwether and E. V. Johnson, Architects.

Huntington Laboratories

HUNTINGTON, INDIANA

PHILADELPHIA 35, PA. • TORONTO 2, ONTARIO

TECHNICAL ROUNDUP

(Continued from page 266)

PANELS "CEMENTED" TO STUDS IN AIRLINES WAITING ROOM

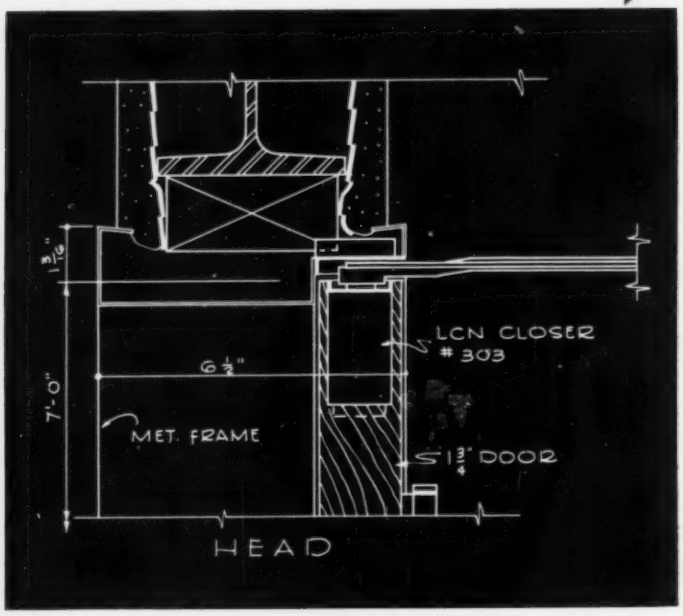
Pre-finished oak plywood panels have been "cemented" to wall studs in the new American Airlines waiting room at LaGuardia Airport in New York. As shown in the photograph below, there are no nailholes in the panels, nor was it necessary to hide the clean joints.

The two installation photographs below show the steps in the installation of the panels. First the studs, and backs of the panels along lines where it will meet the studs, were coated with an adhesive

(U. S. Plywood's *Weldwood Contact Cement*), allowed to dry for not less than 30 min, and then recoated and allowed to dry again. The panels, which were pre-fitted, were then put into place and hammered with a block along the stud lines to assure complete contact. Finishing touches included framing of posters and ventilators.

Separate Ovens. To determine the most efficient and convenient locations for the oven which is separated from cooking burners, the University of Illinois home economics department has tested eight different oven locations and found that the most desirable are: opposite the mix counter and the sink; at the extreme end of the kitchen arrangement next to the serving counter; as part of a work center that is isolated from the others; in a corner between any two centers. These, and other results of the investigation, have been published as Circular C5.33, which is available at a cost of 10¢ from *Small Homes Council, University of Illinois, Urbana, Ill.*

(Continued on page 285)



CONSTRUCTION DETAILS

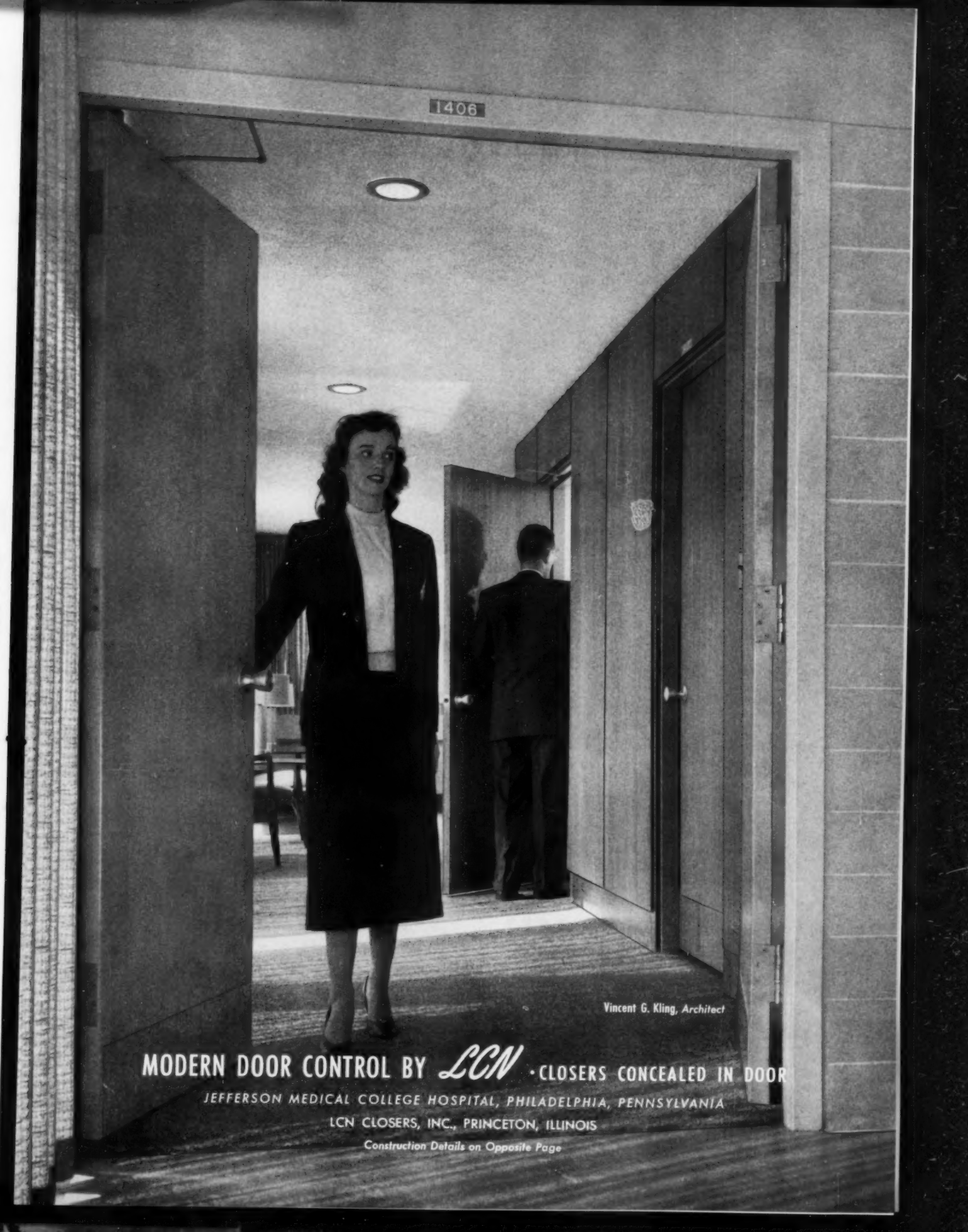
for LCN Closer Concealed-in-Door Shown on Opposite Page

The LCN Series 302-303 Closer's Main Points:

1. An ideal closer for many interior wood doors
2. Mechanism concealed within door; flat arm not prominent, and provides high closing power
3. Door is hung on regular butts
4. Closer is simple to install and to adjust
5. Used with wood doors; wood or metal frames
6. Practically concealed control at little more than exposed closer cost

Complete Catalog on Request—No Obligation
or See Sweet's 1956, Sec. 18e/L

LCN CLOSERS, INC., PRINCETON, ILLINOIS



Vincent G. Kling, *Architect*

MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN DOOR

JEFFERSON MEDICAL COLLEGE HOSPITAL, PHILADELPHIA, PENNSYLVANIA

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page

THERMOPANE® BUILDS BETTER CUSTOMER

Ohio Citizens Trust Company, Maumee, Ohio. Architect: Peterson, Hoffman & Associates, Toledo.

LOF GLASS®

Thermopane
INSULATING GLASS

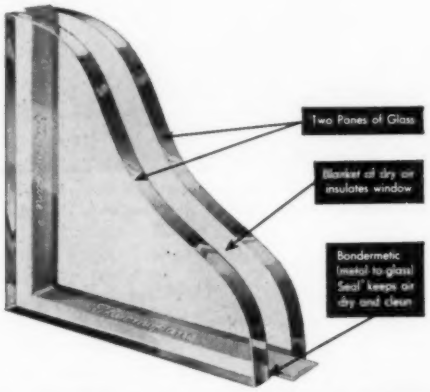
LIBBEY • OWENS • FORD... *a Great Name in Glass*

RELATIONS FOR BANKS

Bankers know that modern buildings, with all their facilities for *easier* banking, attract more people . . . and more people mean more *profits*. That's why banks are using Daylight Walls of *Thermopane* insulating glass. They give a sense of spaciousness . . . keep lobbies warmer in winter, cooler in summer and quieter all year 'round. Customers like banks like this.

Business managers of banks are enthusiastic, too. They find that *Thermopane* reduces heating and air-conditioning equipment needs as well as unit operating costs.

There is also creative satisfaction. *Thermopane's* combined transparency and insulation inspire wide latitude in designs which are impressive as well as practical.



Leader Federal Savings & Loan Assn., Memphis, Tenn. Architect: Walk C. Jones, Jr., Memphis.

Thermopane FACTS

Much technical information is available to help the architect and engineer design for the most effective and most economical use of *Thermopane* insulating glass. It is all in our *Thermopane* Manual which will be sent on request. (See coupon below.)

The following brief data are excerpts from the manual:

ADVANTAGES OF THERMOPANE

1. Savings in fuel
2. Increased usable room space
3. Reduction of condensation
4. Reduced air-conditioning initial equipment needs and operating costs
5. Quieter interiors

INSULATING EFFICIENCY

Thermopane with ¼″ air space—U = .65
Thermopane with ½″ air space—U = .58
—as compared with 1.15 for single glass.

KINDS OF GLASS

Thermopane is made with plate glass for maximum clarity, or with sheet glass when economy is main consideration. Units ½″ thick have ¼″ air space, units 1″ thick have ½″ air space. *Thermopane* can also be made with Heat Absorbing Glass, *Tuf-flex*® tempered plate glass, or several types of Blue Ridge *Patterned Glass*.

STANDARD SIZES

More than 90 standard sizes are made to permit economy in use with most popular types of sash. The *Thermopane* Manual provides a list of sash types and standard sizes for them.

OTHER DATA IN THERMOPANE MANUAL

Heat Loss Data
Warm Side Surface Temperatures
Condensation Points
Sound Insulation
Light and Solar Radiation Transmittance
Reduction of Cooling Load
Strength of *Thermopane*
Wind Load
Weight Per Sq. Ft.
Glazing Instructions
Framing Details
Suggested Specifications

Thermopane is sold by local L·O·F Glass Distributors and Dealers, listed under "Glass" in yellow pages of phone books.

Libbey-Owens-Ford Glass Co., Dept. 8546
608 Madison Ave., Toledo 3, Ohio
Please send me a copy of the Thermopane Manual.

Name _____
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This is the new Music Hall of a great western university.
Architect: Welton Becket and Associates, Los Angeles.

here's a beauty secret for you . . .

LOOKING IN, LOOKING OUT. LOOKING AT

As you look through these great glass walls, you see how free from distortion everything is.

This greater clarity was rare before *Parallel-O-Plate** Glass was developed. L·O·F *Parallel-O-Plate* is the most distortion-free plate glass (and the *only twin-ground* plate glass) made in America. Yet, in most localities, it costs no more than ordinary plate glass!

For beautiful windows, storefronts, display cases, mirrors—for *looking in, looking out, looking at*—be sure *you* get *Parallel-O-Plate* Glass.

Read in the column at the right *why* it is better glass for you. *®

L·O·F GLASS

PARALLEL-O-PLATE GLASS

Finest plate glass made in America...only by **LIBBEY·OWENS·FORD**

PARALLEL·O·PLATE

FACTS

COMPARE the reflections of the upside-down signs in the mirror of conventional plate glass (left) and the mirror of *Parallel-O-Plate** (right).

Parallel-O-Plate Glass is more distortion-free than ordinary plate glass because its surfaces are more parallel.

This great degree of parallelism is the result of a special kind of grinding called *twin-grinding*.

The ordinary method is to cut off a section of glass, grind one side, turn it over and grind the other side.

In the *twin-grinding* process, the glass moves from the furnace through the new annealing lehr and into the *twin-grinding* process where both sides are ground simultaneously in a continuous ribbon 975 feet long. It's precision made all the way.

L·O·F GLASS FOR BETTER LIVING

Out of the research and the laboratories at Libbey·Owens·Ford have come many of the world's greatest advancements in the use of glass. Tinted solar-heat-reducing glass for air-conditioned buildings. *Thermopane** insulating glass with the exclusive metal-to-glass seal. The first successful panoramic windshields were produced by L·O·F, in co-operation with leading automobile designers. These are just a few of the reasons Libbey·Owens·Ford is called "a great name in glass".

For further information, call your Libbey·Owens·Ford Distributor or Dealer (listed under "Glass" in telephone books). Or write Dept. 7546, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.*®

LIBBEY·
OWENS·
FORD

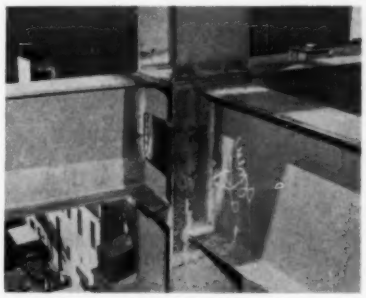
a Great Name in Glass

TECHNICAL ROUNDUP

(Continued from page 280)

WELDED STORE BUILDING HAS RIGID FRAME DESIGN

A narrow, 30-ft-wide building — the new, seven-story Harvey's Department Store in Nashville, Tenn. — was "squeezed" between two existing buildings in 53 calendar days. The speed of construction has been attributed to shop welding of column stiffeners, angle seats, column diaphragm plates and clip angles which make up the approximately 420 tons of structural steel in the building. A welded design was selected to achieve rigid framing for wind resistance and also to permit matching of floors in one of the adjacent buildings, also belonging to the Harvey Co., without bulky bolted connections. An additional reason why the architects, Marr & Holman of Nashville, determined on the rigid-frame, welded design was that the erection method was noiseless, an advantage in a downtown area.



A completed joint at the sixth floor level, where a column splice was made, is shown in the photo above. The main cross beam welded to the column flange is shown at right and the spandrel beam welded to a diaphragm plate at left. Connections between cross beams and columns are of rigid-frame design, carrying the full beam strength through the columns both in moment and in shear. Flanges are beveled 45 deg at the column junction, making a single-vee joint which is welded from the top. The web, which is not beveled, is welded to the column with full-length welds on both sides. A "mouse-hole" cut out in the lower corner of the web allows the weld to be carried through the lower flange joint continuously. Connections between spandrel beams and columns are of semi-rigid design, because the full strength and bulk of a rigid-frame connection are not needed to satisfy load conditions and future additions or extensions to side walls can be made more readily.

(Continued on page 288)

Remember, Simpkins— don't come back without our DP

There's no reason for anyone to be continually puttering around . . . puttying their own sash, caulking to fill cracks, sealing here and fixing there . . . when you specify and use **D-P** compounds! When you glaze, caulk, or seal with **D-P** . . . the job's done for years to come. Be sure to use **D-P** next time. Write for catalogs.

The Complete Line

CAULKING COMPOUNDS
CARTRIDGES & GUNS
GLAZING COMPOUNDS
SEALING COMPOUNDS
PUTTIES • MASTICS
GLAZING STRIP
ROPE CAULK

Preferred by Millions

D-P products are nationally advertised in Family Handyman, Grit, Homecraft, Home Craftsman, House Beautiful's Building Manual, Mechanix Illustrated, Popular Mechanics, Popular Science, etc.

INSIST ON D-P **BEST SINCE 1867**

DP256

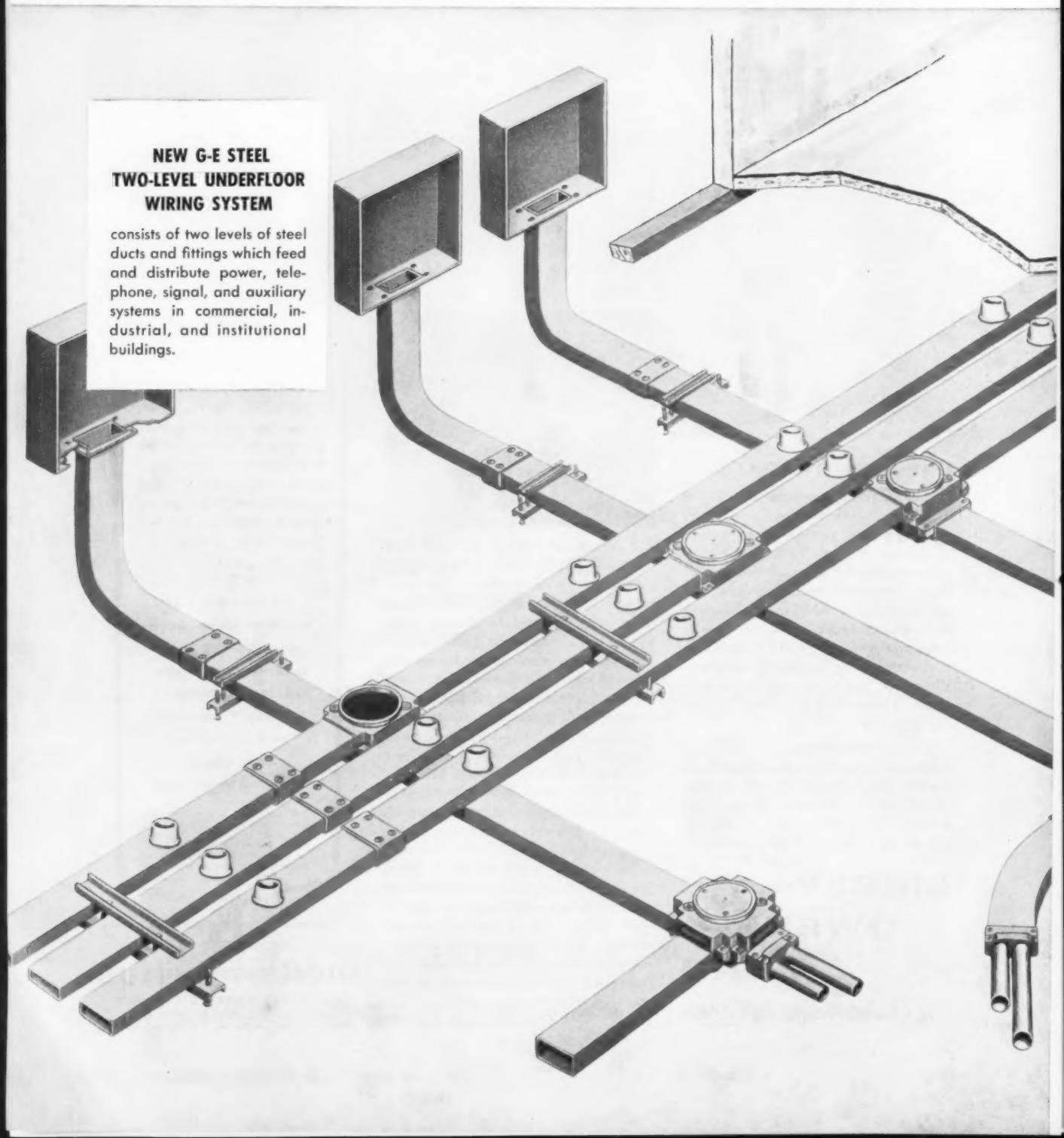
DICKS-PONTIUS

THE DICKS-PONTIUS COMPANY

5302 Huberville Ave., Dayton 3, Ohio
Alexandria, Va. — Dallas, Tex. — Decatur, Ga.

General Electric Announces

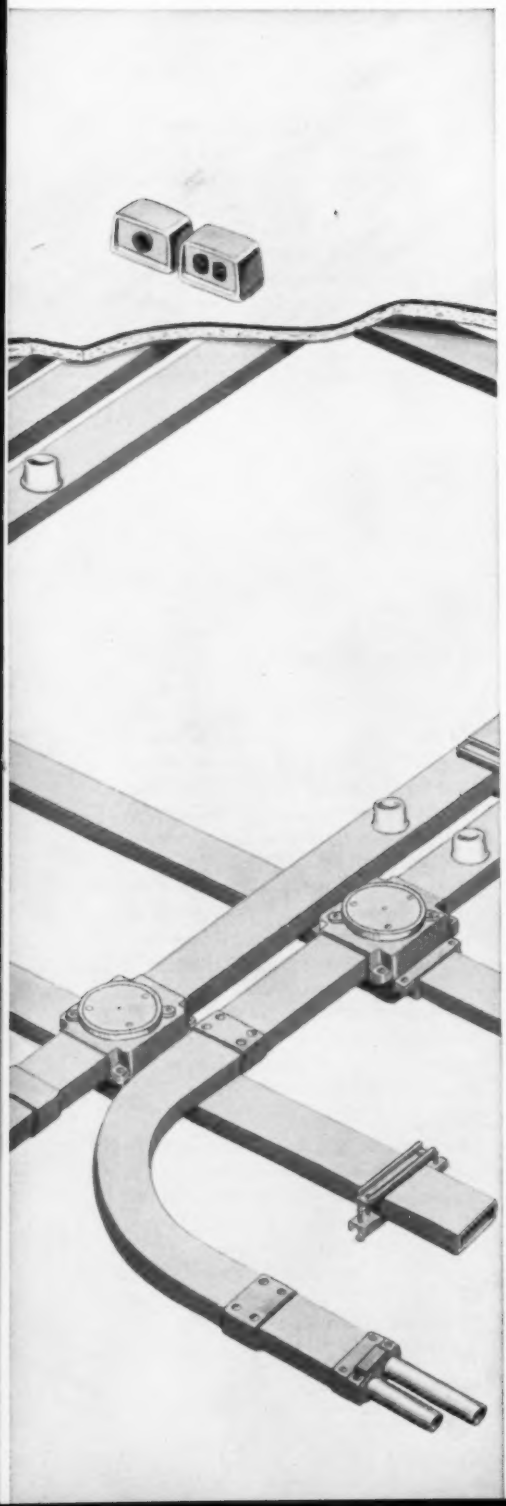
New TWO-LEVEL steel



NEW G-E STEEL TWO-LEVEL UNDERFLOOR WIRING SYSTEM

consists of two levels of steel ducts and fittings which feed and distribute power, telephone, signal, and auxiliary systems in commercial, industrial, and institutional buildings.

underfloor wiring system



- gives completely separate services
- permits unlimited number of duct feeds
- fits any predetermined floor layout
- allows unlimited number of services

A new two-level steel underfloor wiring system offering entirely new benefits to architects, engineers, electrical contractors, owners, and tenants has been announced by General Electric.

COMPLETE SEPARATION OF SERVICES because only single-duct junction boxes are used. Duct entrances are on two levels—usually with feeder duct below and distribution duct above. This separation allows unobstructed runs and permits conductors to be pulled straight through the boxes. No crossunders or crossovers are necessary in the new G-E two-level system.

FLEXIBILITY IN LAYOUT AND DESIGN is now possible because there are no limitations to the duct pattern in either the feeding or distribution portions of the two-level system.

ONLY ONE TYPE AND SIZE JUNCTION BOX TO INSTALL—contains no tunnels or barriers. Its entire interior is accessible for work and inspection. Wire pulling is easier and circuits are easy to trace because of two-level separation of all services.

INCREASED WIRING CAPACITY is provided for by the new steel duct (4-square inches cross-sectional area).

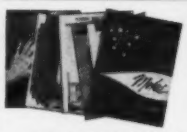
FIND OUT how this two-level system can help you distribute power, telephone, signal, and auxiliary systems. Get in touch with your nearest G-E Construction Materials District Office or write for information bulletin to Section C59-45, General Electric Company, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product

GENERAL ELECTRIC

CONDUIT PRODUCTS DEPARTMENT

HOW OFTEN IT'S TRUE—the sale is made or lost in the kitchen. That's why it pays to feature the warmth, charm and individuality of fir plywood kitchen cabinets and built-ins in all your homes. No limit to size, design, or color. No juggling of "stock" units—plywood fits your design requirements exactly. It's strong, split-proof, good looking. Easy to cut, fit, fasten and finish.



FREE PORTFOLIO OF FIR PLYWOOD INTERIORS
File-folder assembly includes design ideas, specifications, application data. Write (USA only) Douglas Fir Plywood Assoc. Dept. AR, Tacoma 2, Washington.

DFPA TESTED QUALITY

INSIST ON DFPA GRADEMARKS!
DFPA grademarks assure quality. Standard grades for interior finish are A-A, A-B and A-D (PlyPanel®). Special panels include overlaid plywood . . . "relief grain" (brushed, imbossed and striated panels) . . . and Texture One-Eleven® "grooved."

WSP

Plywood of other western softwoods available; look for this DFPA grademark.

TECHNICAL ROUNDUP

(Continued from page 285)

Fabrication and erection of structural steel were handled by the Englert Engineering Co. of Nashville. Englert figured that the welded rigid-frame design would reduce the amount of shop detailing and shop fabrication by some $10 a ton over bolted or riveted connections and would permit an appreciable saving in over-all steel requirements. Lincoln Electric Co.'s iron powder electrodes were used in welding operations.

The Air Moving and Conditioning Association, Inc., was formed in Chicago on January 10 by 46 manufacturers of air moving and conditioning devices. The purposes of the new trade association, in addition to promoting the interests of the manufacturer and the public, are to encourage the development of the science and art of engineering as related to air moving and conditioning devices and to perfect methods for testing such devices for performance. Officers are: president, R. W. Nelson of American Air Filter Co., Inc.; vice presidents, J. F. Snow of Davidson Fan Co. and C. C. Cheyney of Buffalo Forge Co.; secretary-treasurer, W. H. Rietz of Ilg Electric Ventilating Co. The association headquarters are located at 2159 Guardian Bldg., Detroit 26, Mich., and are under the direction of L. O. Monroe, executive vice president.

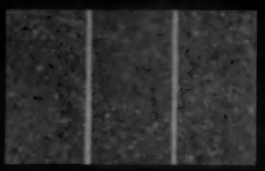
Standard Dimensions. The NAHB and the Producers' Council, Inc., have launched a program to stem the rise in home construction costs by bringing about coordination and standardization of dimensions for materials and equipment used in home building. The program calls first for the establishment, by mutual agreement, of desirable and functional dimensions for various materials and equipment, and second, for encouragement of manufacturers to produce these standardized products and of builders to use them. Initial efforts will be directed to the standardization of door and window openings.

American Society of Heating and Air Conditioning Engineers elected John W. James president at the 62nd Annual Meeting held in Cincinnati. Mr. James, a Registered Professional Engineer in the states of Oregon and Illinois, is Vice President of Research for McDonnell & Miller, Inc., Chicago.

(Continued on page 292)

Research Laboratory Classroom, University of Michigan

MOSAIC® *The only complete ceramic tile line*
from America's largest ceramic tile manufacturer



GRANITEX TILE

Ask your Mosaic Representative for helpful, informative Mosaic literature or write THE MOSAIC TILE COMPANY: Dept. 30-32, Zanesville, Ohio.

Showrooms, Warehouses, Factories from Coast to Coast WAREHOUSES & SHOWROOMS: Atlanta, Baltimore, Boston, Chicago, Dallas, Denver, Detroit, Fresno, Greensboro, E. Hartford, Hempstead, Hollywood, Miami, Minneapolis, New Orleans, N. Hollywood, Philadelphia, Portland, Rosemead, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C. SHOWROOMS: Milwaukee, New York. OFFICES: Birmingham, Buffalo, Cincinnati, Kansas City, Oklahoma City, Pittsburgh. FACTORIES: Corona, El Segundo, Ironton, Jackson, Little Rock, Matawan, Zanesville.

AT THE REPUBLIC NATIONAL BANK BUILDING,

DALLAS, TEXAS

THE ANSWER IS BRYANT WIRING DEVICES

Architects: Harrison & Abramovitz, New York, N. Y.
Consulting Engineers: Jaros, Barem & Boles, New York, New York
Zumwalt & Vinther, Dallas, Texas
Electrical Contractor: Fischbach & Moore of Texas, Inc., Dallas, Texas
General Contractor: J. W. Bateson Company, Inc., Dallas, Texas

LANDMARK OF THE SOUTHWEST — The third aluminum building constructed in the United States thus far, the Republic National Bank Building is the first structure of this type in the Southwest. A $25,000,000 project, this new building is the latest in modern, functional architectural design.

BRYANT SPECIFIED — Because of their long-standing reputation for the highest quality devices, Bryant switches and outlets were called for in the specifications. Noted for quiet operation and ease of installation, Bryant devices assure a once-installed, stay-installed job.

FOR ALL TYPES OF INSTALLATION — Whether for the home, office or industry, Bryant has a full line of quality wiring devices to fill any requirement.

No. 4801-I
15 Amperes, 277 Volts
A.C. Switch

No. 4832-I
15 Amperes, 125 Volts
10 Amperes, 250 Volts
2-Wire Duplex Outlet

No. 4961-I
10 Amperes, 125 Volts
5 Amperes, 250 Volts
A.C./D.C. Switch

No. 5262-I
15 Amperes, 125 Volts
3-Wire Duplex Grounding Type Outlet

BRYANT
SUPERIOR WIRING DEVICES

Listed by Underwriters' Laboratories, Inc.

THE BRYANT ELECTRIC COMPANY
Bridgeport 2, Connecticut
CHICAGO • LOS ANGELES

J-00053

AIR CONDITIONED TRIPOD

Texas Tower radar "Island" keeps cool with AIRTEMP Air Conditioning

Under a blazing summer sun, this offshore air defense Texas Tower radar "island" could literally *cook* the Air Force crews that man it. But not with Airtemp air conditioning on the job!

Cool, clean, healthful air, provided by packaged chiller units, helps keep radar crews alert...helps precision radar stay accurate. Thus, men and equipment alike perform efficiently in this vital link of our early warning network.

It's unusual air conditioning to be sure, but just a routine application for top engineers of Airtemp Construction Corporation. As air conditioning specialists, these men provide efficient systems for buildings, offices and stores of every kind.

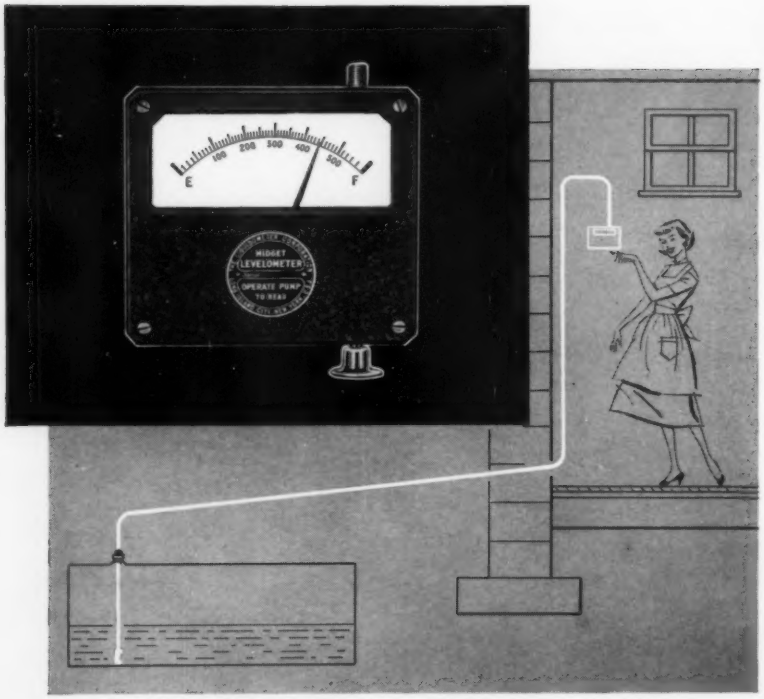
Their experience, plus years-ahead engineering by Chrysler, assures dependable, trouble-free air conditioning through the years.

When *you* specify Airtemp, you help clients cut operating costs, attract new business, increase profit dollars. Let your Airtemp distributor give you the facts. Or, write: *Airtemp Construction Corp., Dept. AF-4-56, Dayton 1, Ohio.*

Airtemp
CONSTRUCTION
CORPORATION

SUBSIDIARY OF CHRYSLER CORP.

AIRTEMP BUILDS AIR CONDITIONING TO MEET EVERY REQUIREMENT



LOW-PRICED...QUALITY MIDGET LEVELOMETERS

GIVE DEPENDABLE INDICATION OF TANK CONTENTS

Midget Levelometers provide home owners and plant engineers with reliable, easy-to-read, trouble-free indication of fuel supply. The dangers and inconvenience of old-fashioned dip sticking and taping methods are eliminated. In the plant, fire and labor hazards are cut . . . costly shut-downs caused by lack of fuel are avoided.

Levelometers operate on an adaptation of the hydrostatic principle. They establish a balance between the height of the liquid to be measured and an indicator. Dial type indication provides maximum readability. Levelometers are precision built, rugged, easy to install and constructed of the finest materials. Approved by UL, FM and BSA, New York, they are used for gaging fuel oil, diesel oil, gasoline and a variety of other liquids.

Levelometers are available in several sizes for a wide variety of applications. For complete information write Dept A.

LIQUIDOMETER INSTRUMENTS

THE LIQUIDOMETER CORP.

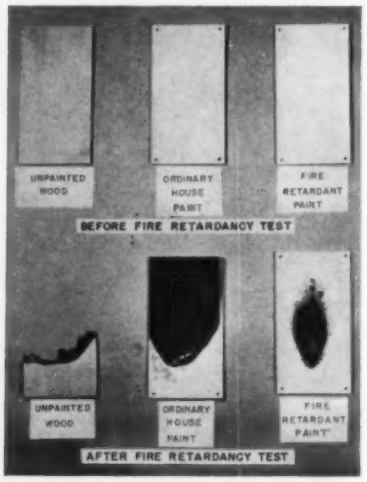
SKILLMAN AVENUE AT 36TH STREET, LONG ISLAND CITY 1, N. Y.

TECHNICAL ROUNDUP

(Continued from page 288)

ENGINEERS CORPS DEVELOPS NEW FIRE RETARDANT PAINTS

Fire retardant paints, for interior and exterior use, have been developed for all climatic conditions by the U. S. Army Corps of Engineers Research and Development Laboratories in Fort Belvoir, Va. The paints which, according to project engineers, feature all the aesthetic and protective properties of good interior and exterior paints, contain certain pigments and oils which form a spongy insulating layer when subjected to heat. This spongy layer does not stop fire, but does slow down the rate of burning and so aids materially in minimizing damage and loss of life.

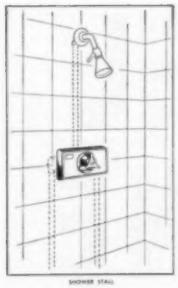


A number of pigments and vehicles including samples from industry, were tested at the laboratories. Test panels were burned in a cabinet under controlled conditions, and the amount of weight loss and char volume calculated. Comparative paint samples are shown in the photograph above. The paints were evaluated in the Arctic, desert and tropics as well as at Fort Belvoir after 6-month and 1-year exposures.

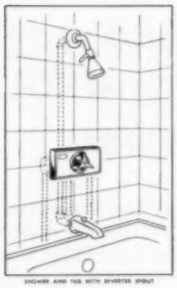
Electronic Hotel. Many time-consuming operations in today's hotels will be speeded up or eliminated in electronic hotels of tomorrow, predicted W. T. Gove, manager of Minneapolis-Honeywell's hotel division, at a recent convention of the American Hotel Association. Once a guest is guided to his room by a computer-staffed registration desk, he said, his comfort will be a matter of button-pushing. A bedside console with a panel of buttons will permit automatic

(Continued on page 295)

More POWERS to You for BETTER Showers



HYDROGUARD has a built-in shut-off valve therefore none is required between it and the shower head.



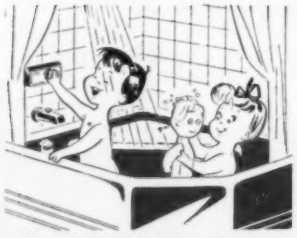
For Shower Singing Comfort and Real Safety

Specify **POWERS**

New **Hydroguard®**

–the finest **thermostatic** shower control made for homes, clubs, schools, hotels and hospitals

Hydroguard Styling Simplifies Shower Installation



Don't Skimp on Safety in Showers
Get POWERS
SAFE SHOWER SYSTEMS data.
Call your nearest Powers office.

HYDROGUARD
Is Nationally Advertised

(c63a)

More Convenient—there's only ONE dial to turn. Note uncluttered simplicity of installations above. Powers Triple duty Strainer-Check-Stops concealed behind the HYDROGUARD cover, simplify piping and tile work. Walls are unmarred by protruding knobs or 2 to 4 valve handles. There's no confusion.

You Can Really Enjoy Worry-Free Bathing in perfect comfort in a HYDROGUARD shower. Temperature stays where you set it regardless of *pressure* or *temperature* changes in water supply.

Thermostatic SAFETY-LIMIT Protects Children from Scalding. It prevents flow of water to shower or tub above 110°F. If cold water supply fails HYDROGUARD instantly shuts off the shower.

Phone or Write our nearest office for Bulletin 366

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*

65 Years of Leadership in Water Temperature Control

STEEL STONE GLASS

get together and stay together with THIOKOL liquid polymer

This handsome new Socony Mobil mid-Manhattan skyscraper is using DEL—a THIOKOL based caulking compound for lifetime weatherproofing.

WHY?

THIOKOL liquid polymer converts entirely to rubber at ordinary temperatures. This rubber insures a durable, tenacious seal even after years of weathering, maintains resilience and adhesion at 250° above to 65° below zero.

Before specifying your sealer—investigate THIOKOL—save costly future replacement. FOR FULL INFORMATION write THIOKOL CHEMICAL CORPORATION, 784 N. Clinton Ave., Trenton 7, N. J. IN CANADA: Naugatuck Chemicals Division, Dominion Rubber Company, Elmira, Ontario.

DEL is manufactured by the David E. Long Corp., N. Y. C.

Thiokol Chemical Corporation manufactures Thiokol Liquid Polymer only as a raw material. We are happy to indicate sources of suitable compounds for end use.

Thiokol®

RESEARCH PIONEERS IN SYNTHETIC RUBBERS

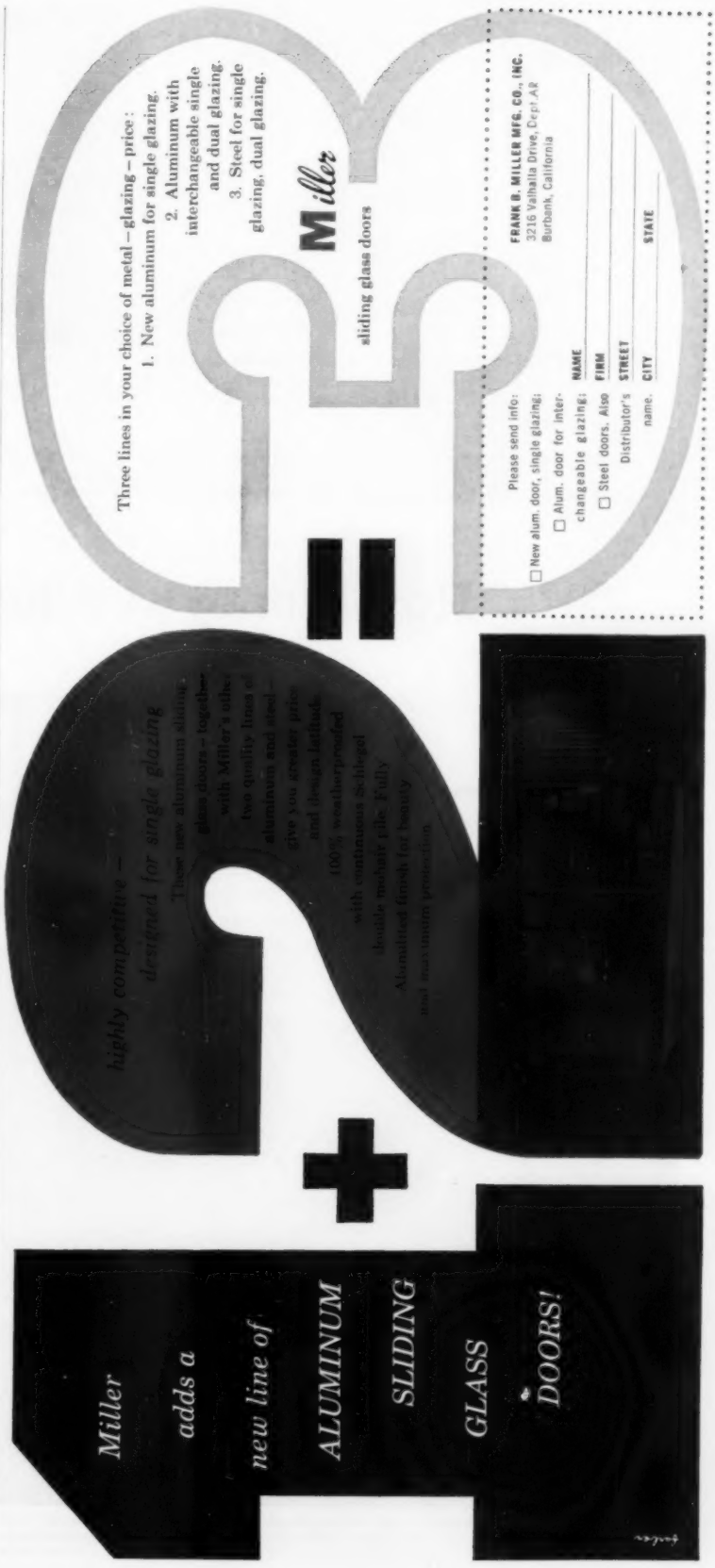
(Continued from page 292)

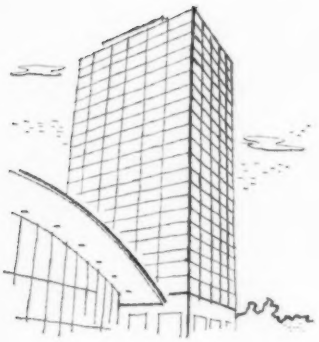
temperature adjustment for heating or cooling, remote operation of either radio or TV, push-button selection of the time of morning call and remote operation of all lights and locking of the door. The console will also collect messages, handle phone calls and give news and weather reports. It may even be feasible to lace the hotel with a network of pneumatic tubes for almost instantaneous delivery of such room-service items as ice, newspapers and food.

Live Better . . . Electrically is the theme of a nation-wide drive to promote the development of the residential market for electricity and electrical products. Inaugurated on Feb. 8 through a closed-circuit telecast (the largest ever) to 40,000 electric utility men and associates, the drive, which will be spearheaded by widespread and diversified advertising and promotion programs, will have the cooperation of appliance dealers and distributors, architects, bankers, builders, contractors, manufacturers and realtors. In addition to creating a greater demand for electricity and electrical appliances in the home, this program is intended to improve also the standards of home wiring and home construction. It is hoped that the greatest benefit to architects will be a resulting greater freedom in designing homes.

Steel Joist Institute, whose membership comprises the major producers of open-web steel joists, has adopted a program for control of standardized products manufactured by its members. Under the program, it will conduct unscheduled inspections of its members' plants to determine conformity of products with established standards of dimensional tolerance, panel spacing, eccentricity of joints and alignment of bearing members.

Air Conditioning — Refrigerating Data Book — Design Volume. The ninth edition of this data book, edited by Milo M. Bolstad, professor of mechanical engineering at the University of Missouri, contains the fundamental data and basic engineering information necessary for the design of air conditioning and refrigeration equipment and systems. 980 pp. 6½ x 9 in., illus. $10. Published by *The American Society of Refrigerating Engineers, 234 Fifth Ave., New York 1, N. Y.*


Miller
adds a
new line of
ALUMINUM
SLIDING
GLASS
DOORS!
highly competitive —
designed for single glazing
These new aluminum sliding glass doors – together with Miller's other two quality lines of aluminum and steel – give you greater price and design latitude
100% weatherproofed with continuous Schlegel double molair pile. Fully Alumilited finish for beauty and maximum protection
Miller
sliding glass doors
Three lines in your choice of metal – glazing – price:
1. New aluminum for single glazing.
2. Aluminum with interchangeable single and dual glazing.
3. Steel for single glazing, dual glazing.
Please send info:
☐ New alum. door, single glazing;
☐ Alum. door for interchangeable glazing;
☐ Steel doors. Also
Distributor's name.
FRANK B. MILLER MFG. CO., INC.
3216 Valhalla Drive, Dept. AR
Burbank, California
NAME
FIRM
STREET
CITY
STATE

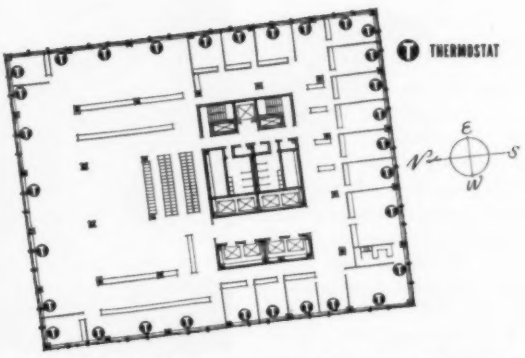


Honeywell Customized Temperature Control—a case history

How Honeywell helps give Denver's

Mile High Center office building, Denver. Owners: Webb & Knapp and George A. Fuller Company. Architects: I. M. Pei & Associates; Kahn & Jacobs and G. Meredith Musick. Consulting engineers: Jaros, Baum & Bolles; Severud-Elstad-Krueger. General contractor: George A. Fuller Company. Prime mechanical contractor: Kerby Saunders, Inc. Plumbing and heating contractor: Crabb Plumbing & Heating Co. Electrical contractor: Fishback & Moore.

Remarkable sense of space is present in outside offices such as this one, occupied by Webb & Knapp senior vice president, Arthur Rydstrom. Open effect is created by strip windows at floor level and larger glass panels above. Despite such free use of glass, comfort is constant. In offices tenants need only dial their choice of temperature; the Honeywell Customized Temperature Control installation then maintains it accurately and efficiently.



Individual office temperature control is indicated in this typical Mile High Center floor plan, showing Honeywell thermostat locations. Flexibility and quick response of the Honeywell Customized installation helps solve another problem, too. At Denver's elevation, one side of the building often needs heat while the other needs cooling. Electronic solar thermostats on the roof activate cooling according to changes in the direction of the sunlight striking the building.

Mile High Center ideal comfort

Tenants of imposing new office building may choose individual comfort preferences

BUSINESS quarters completely modern in concept are provided by the new 23-story Mile High Center office building that dominates Denver's skyline.

Ideal indoor weather was assured by the building's planners. For they chose a Honeywell Customized Temperature Control installation to govern the year-round air conditioning system, giving tenants individual comfort control.

Adjoining the central structure is a three-level transportation building with a lower level concourse where shops and restaurants are located. Because of the flexibility of Honeywell controls, customized comfort is enjoyed throughout Mile High Center—from lofty offices to lower level shops.

That's what "customized" means—a control installation fitted to the needs of the building and its occupants, in heating, cooling, ventilating and humidity control.

True customized control can be provided only by Honeywell. Because only Honeywell manufactures all three types of controls—pneumatic, electric and electronic. Hence only Honeywell is in a position to make truly objective recommendations.

Whether it's an office building, factory, bank or store—any building of any size, new or existing—Honeywell Customized Temperature Control can help solve your clients' problems of heating, ventilating, air conditioning and industrial control.

For full details on Honeywell Customized Temperature Control, and the economical Periodic Maintenance Plan, call your local Honeywell office. Or write Honeywell, Dept. AR-4-65, Minneapolis 8, Minn.

MINNEAPOLIS **Honeywell**

H HONEYWELL **Customized Temperature Control**

(Continued from page 267)

Cold Storage Doors. *Prest-O-Matic* automatic cold storage doors, a development from *Prest-O-Matic* industrial doors, are complete units, electric in operation, including not only the doors and operator but also the frame, all hardware and controls. Frames are of kiln-dried Douglas fir faced with ½-in. marine grade plywood. Insulation is foamed in place, 6 in. thick for freezer doors and 4 in. for coolers. Two models are available: a single horizontal sliding, which slides to either left or right, and a double sliding, shown above, which slides to both sides meeting at the center. The usual control is by means of pull cord switches, placed in one or more spots on either side of the doorway. Other means of control include floor plates, actuated by wheels of the trucks, and photo-electric cells. A manual release permits hand operation of the doors in case of power failure. An optional locking device provides security but also permits a man locked inside to open the door by hand. Electric heating cables are incorporated in the doors to eliminate icing at all contact points. *Clark Door Co., Inc., 515 Hunterdon St., Newark 8, N. J.*

here's where troubles can begin

OR BE SOLVED

Classroom wardrobes are attractive, practical space savers—but when it comes to safety, easy operation and low maintenance, you can specify and insist on EMCO with confidence because of 3 EMCO EXCLUSIVE Advantages:

SINCE EMCO 1932 ® **classroom wardrobes**

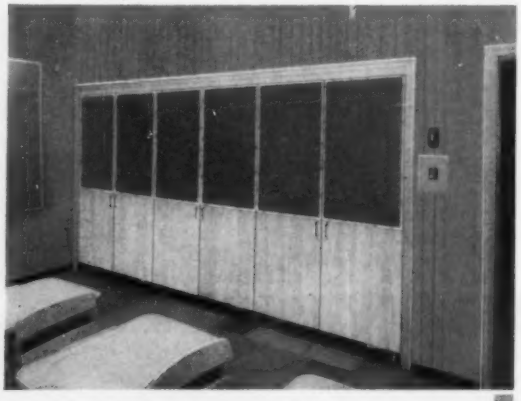
1 **EXCLUSIVE HARDWARE DESIGN** makes wardrobe completely safe. There are no obstructions in recess to trip over . . . no overhead weights to fall . . . fingers or arms cannot be mashed when opening doors.

2 **INSTALLATION IS MADE ONLY BY EMCO FACTORY-TRAINED EXPERTS** . . . and is included in the price. That's why only EMCO Wardrobes are . . .

3 **GUARANTEED FOR THE LIFE OF SCHOOL!**

To Be Sure Of The Safest, Best Planned Wardrobe—**Specify and Insist On EMCO Classroom Wardrobes**

Write for Catalog And Name of Nearest Representative



EQUIPMENT Manufacturing Co., INC.

1400 Spruce St., Dept. AR, Kansas City, Mo.

Bar-Coffee Table can be lifted with no effort from coffee table height to become a buffet server or bar. Made of cigarette and alcohol resistant wood-grain laminates and metal legs, the unit folds completely flat to 5 in. thick for storage. The interior has pigeon-holed, permanently attached trays for shot glasses, highball glasses, liquor and chaser bottles. *Straus-Duparquel, Inc., 33 East 17th St., New York, N. Y.* *(Continued on page 302)*

CEILING OVER 40,000 FEET!

Convair's F-102A flies higher – faster – because HEXCEL aluminum honeycomb, used as core material in sandwich construction, lightens its load, smooths its contours, and raises its overall efficiency with the highest strength-to-weight ratio yet developed!

NATIONAL HOUSING CENTER — AUBINOE EDWARDS & BARRY, A.I.A. — KLUCKHUHN, COBB & McDAVID, ENGINEERING CONSULTANTS — WALTER TRILAND CORP., LIGHTING CONSULTANT

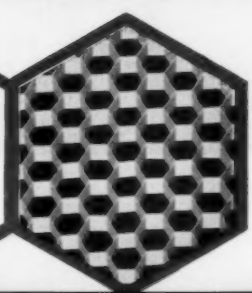
■ **HONEYLITE**, the versatile new lighting material, was selected to cover over 40,000 square feet of ceiling area in Washington, D. C.'s National Housing Center because it met all requirements – beautifully. Made of HEXCEL aluminum honeycomb, **HONEYLITE** diffused light so efficiently and so evenly that, without first checking with a light meter, many people couldn't believe the level of illumination was as high as 75 foot candles.* The second requirement – a louverall ceiling that would not interfere with air conditioning outlets located above it – was made to order for the unique nature of **HONEYLITE**'s hollow-celled construction. For these reasons, and for more listed below, specify **HONEYLITE** for your next lighting installation – it's the most beautiful, most functional, luminous ceiling you can find anywhere!

- 45° and/or 60° light cut-off provides effective shielding
- Non-flammable and UL approved
- Weighs less than three ounces per square foot
- Free circulation of air prolongs life of light units
- Provides lowest surface brightness obtainable
- Non-static and dust resistant
- May be cleaned with ordinary vacuum brush attachment

* See LIGHTING – December 1955

H456A

HONEYLITE (shown at right actual size) installation is simple, inexpensive. For full ceilings, aluminum T-bars are used to suspend **HONEYLITE** panels below lighting units. **HONEYLITE** is also ideal for use in troffers and lighting fixtures.



HONEYLITE®

LIGHT-DIFFUSING ALUMINUM HONEYCOMB

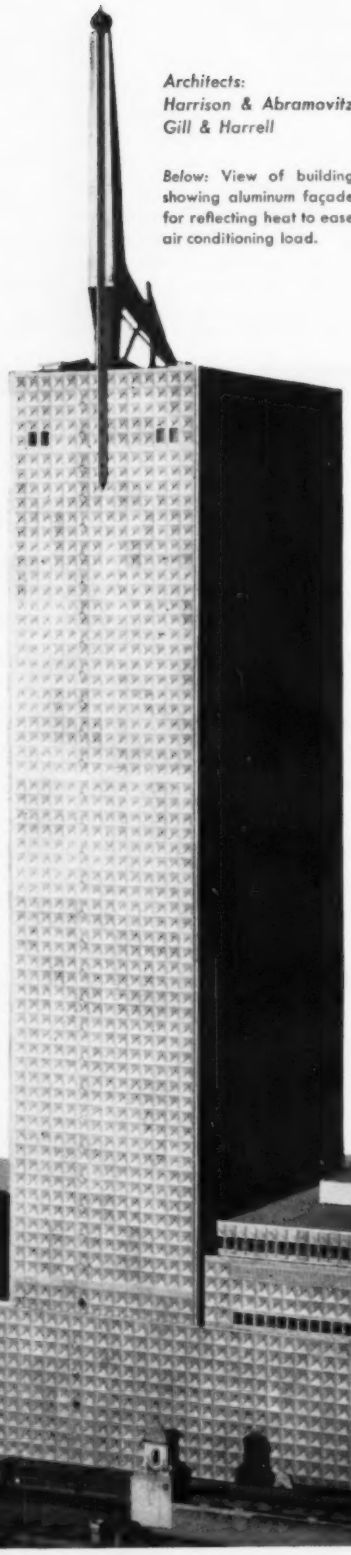
A development of **HEXCEL PRODUCTS INC.**

991 SIXTY-FIRST STREET, OAKLAND 8, CALIFORNIA

AIR CONDITIONING FORCEFUL FACTOR OF DESIGN TO GIVE ATTRACTIVE APPEARANCE AND ECONOMICAL OPERATION

Architects:
Harrison & Abramovitz
Gill & Harrell

Below: View of building showing aluminum façade for reflecting heat to ease air conditioning load.



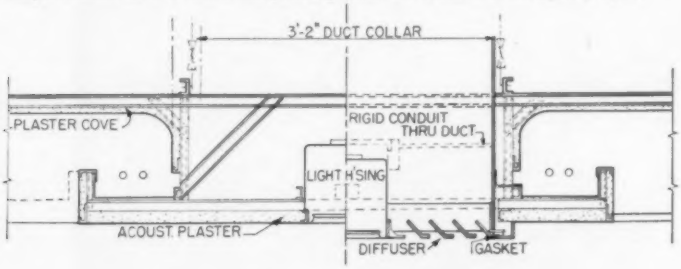
From the beginning, air conditioning was included in the plans for the Republic National Bank Building in Dallas, Texas. To minimize operating costs, the architects sheathed the western exposure of the building in aluminum. The remaining sides were windowed with vertical-pivoted sash containing blue-green heat-absorbing glass.

Air conditioning requirements were met by utilizing three basic systems: a conduit system for the periphery of the tower section; interior-zone units for each floor of the tower; and a dehumidifier system for the eight-story banking wing. Choice of a high-velocity air conditioning system made it advantageous to cantilever the floors on all sides so the small ducts could be positioned between perimeter beams and the façade, with minimum loss of rentable area.

In the banking wing the upper floors are hung from huge trusses, freeing the main banking floor of columns. The major bulk of the air conditioning equipment serving both buildings is cleverly arranged between the trusswork for maximum economy of space.

Two 1,000-ton, steam-turbine-driven centrifugal refrigeration machines using "Freon-11" are coupled with 150-hp. pumps to circulate chilled water throughout the structure. Boilers supplying steam work hardest in summer, as the winter heat load is comparatively light.

Below: Detail of banking room ceiling, which incorporates lighting and air conditioning in its design. Minimum heat radiation and pleasing detail are featured in the lighting layout.



What's new in

At right: Lobby entrance to main banking room, showing off-white ceiling design which carefully integrates lighting and air conditioning patterns.

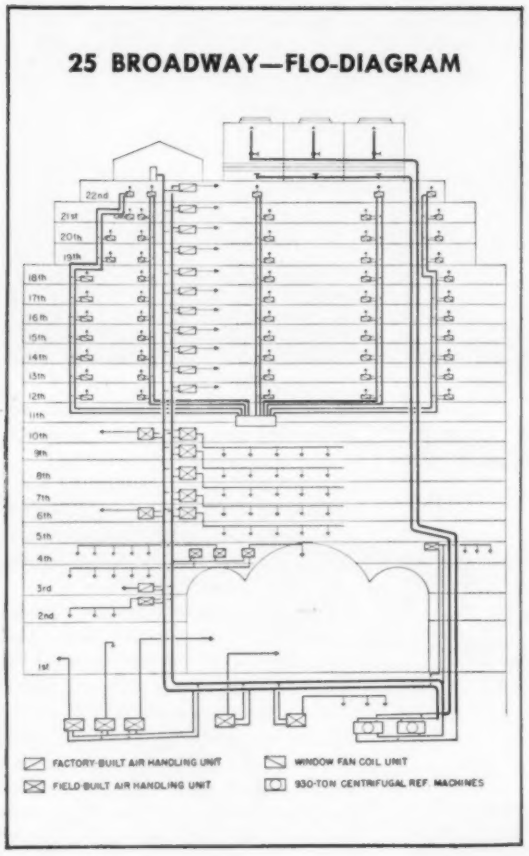


Diagram of Cunard Building showing piping arrangement and location of equipment to circulate air over coils containing chilled water.

ELEVATOR SHAFTS CONVERTED TO AIR CONDITIONING DUCT SPACE IN MODERNIZING EXISTING BUILDING

Central air conditioning without expensive alterations for ductwork was accomplished in the 35-year-old Cunard Building, 25 Broadway, New York. Two express elevators were discontinued, and an unused vent shaft was sealed to carry relief and fresh air. This air is circulated over coils containing chilled water by the air handling equipment on each floor. Chilled water at 42°F. is supplied by two steam-driven 930-ton centrifugal compressors using "Freon-12" refrigerant.

Cleared storage areas made room for air handling units with no sacrifice of rentable space. Central air units above the 12th floor are supplemented by window fan-coil units controlled by the tenant.

In winter all units use hot water converted from steam in the basement. Heat load in the lower stories is carried by the original steam radiators at the windows.

Interior alterations, mostly accomplished during working hours, involved furring of ceilings and some columns with occasional duct runs left exposed.

air conditioning installations ...using "Freon"*

For any air conditioning installation, no component of the cooling system is more important than the refrigerant. That's why you should always specify a Du Pont "Freon" refrigerant whenever you have an air conditioning job to do. When you specify "Freon", you can be sure it will not give any trouble from acids or moisture. For 25 years Du Pont has manufactured "Freon" to unsurpassed standards of quality and purity. The result is a product which contributes to long efficient service for any air conditioning equipment.

"Freon" refrigerants are ideal for air conditioning, because they are nonflammable, nonexplosive and virtually nontoxic. Building codes everywhere endorse "Freon" refrigerants.

You can specify a "Freon" refrigerant for any size and type of air conditioning installation. So insist on a dependable "Freon" refrigerant, made by Du Pont, whenever you have an air conditioning job to do.

SEND FOR FREE BOOKLET filled with informative data on a variety of air conditioning installations. For your free copy write to E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Div. 114, Room 2420 Nemours Building, Wilmington 98, Delaware.

1931 KINETIC 1956

25 YEARS OF

FREON

REG. U. S. PAT. OFF.

SAFE REFRIGERANTS

*"Freon" is Du Pont's registered trademark for its fluorinated hydrocarbon refrigerants.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING ...THROUGH CHEMISTRY

(Continued from page 298)

Plastic-faced Plywood. *Duraply* is a plastic-surfaced fir plywood panel which is said to be both weather- and waterproof and strong enough for use as exterior siding, interior paneling, built-ins and cabinets. The plastic surface, called *CreZon*, is a resin-impregnated cellulose fiber sheet, which is applied to quality-controlled plywood, as shown in the photograph at right, and then permanently fused to the wood under heat and pressure in a hot press. The durable surface which results from this process in many cases eliminates one coat in a conventional three-coat exterior paint application. Once applied, it is said that a good paint surface will not check, peel or blister and will be unaffected by sun, rain and freezing temperatures.

Duraply is the first product application of a new development in plywood technology which makes possible the transformation of second-growth timber and saw logs into solid, smooth sheets. The key is a new patching machine which fills all defects, such as knotholes, with a plastic compound developed by American-Marietta Co. The panel, after patching, is cured under infra-red heat and sanded to make ready for application of *CreZon* sheet.

Duraply is available with one- or two-side plastic surfaces in 4 x 8 sheets $\frac{5}{16}$- to $\frac{3}{4}$-in. thick. In addition, precut wide-lapped siding is available with beveled drip edges, furring strips applied and ventilation provided. Development resulted from joint research by *Crown Zellerbach Corp., San Francisco 19, Calif.*, producers of *CreZon*, and *U. S. Plywood Corp., 55 West 44th St., New York 36, N. Y.*, which will handle the marketing.

Acoustical Tile. *Ebblone* is a foamed mineral composition tile with a light reflectance of 81 per cent, a noise reduction factor of .75 and a sound absorption coefficient of .77 at 500 cycles. Rated incombustible by Underwriters' Labs, it is said to require no additional finishing but may be painted with any non-bridging paint without materially affecting its acoustical properties. It is available factory-kerfed, beveled and back-cut for suspension systems and in striated, grained and standard plain textures. Sizes are 12 by 12 and 12 by 24 in. *F. E. Schundler & Co., Inc., 504 Railroad St., Joliet, Ill.*

(Continued on page 306)

THE INDEPENDENT LIFE
and ACCIDENT INSURANCE BLDG.
Jacksonville, Florida

ARCHITECTS
Kemp, Burch & Jackson

4 Balanced Doors in the entrances to The Independent Life and Accident Insurance Co.

more . . . .

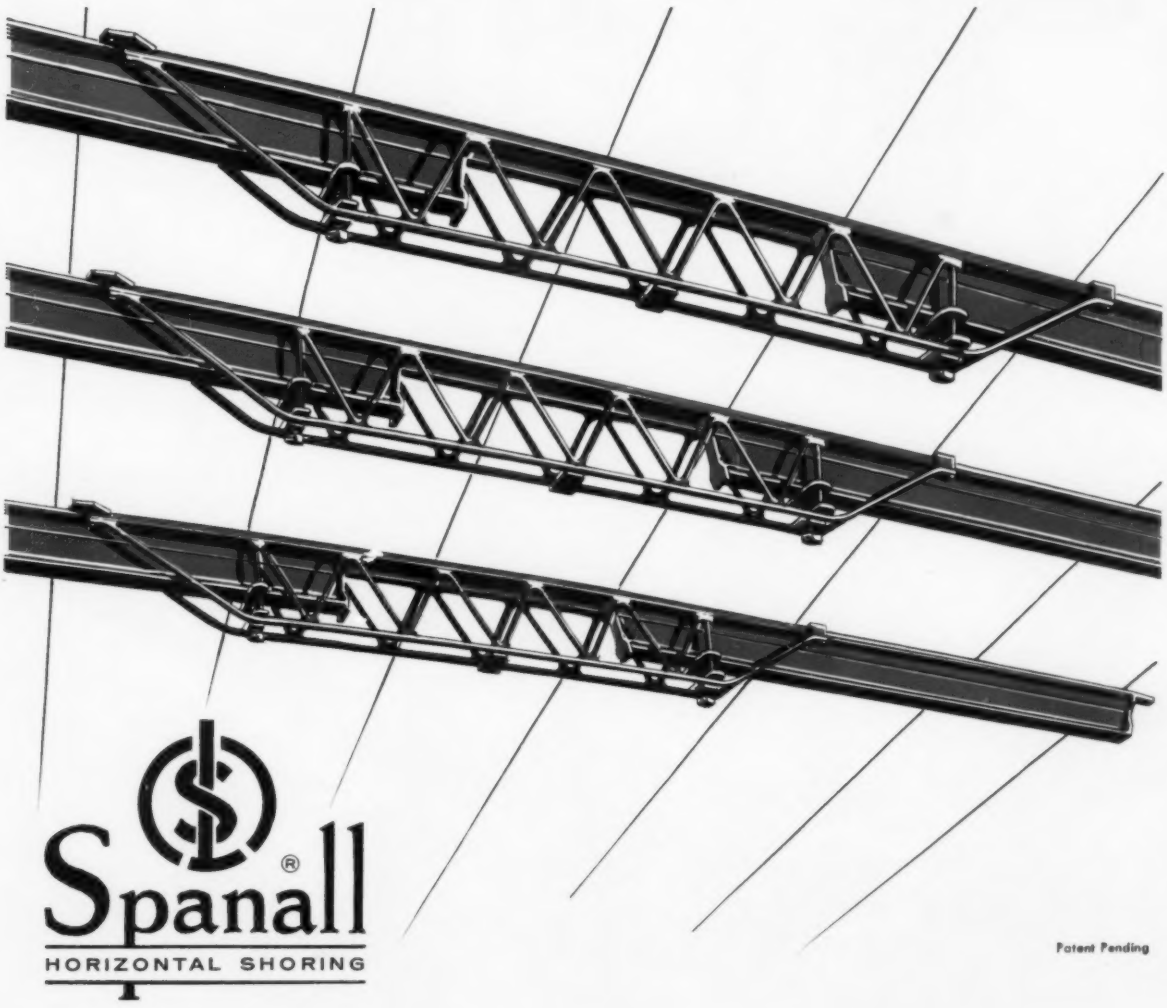
Ellison doors

The Door that lets TRAFFIC through QUICKLY

ELLISON BRONZE CO.
Jamestown, New York

representatives in 77 principal cities in the United States, Canada and Puerto Rico

Ellison the BALANCED DOOR



Spanall®
HORIZONTAL SHORING

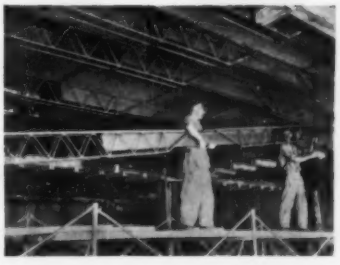
Patent Pending

. . . cuts cost of concrete floor forms up to 40%

S-L Spanall—newest of all-metal, adjustable supports used in suspended formwork—has been generally available for only a few months. Yet it is now being specified and used by engineers and contractors in all parts of the country.

The overwhelming demand for S-L Spanall is due to the time, labor, safety and cost saving ease with which the supports are assembled and the camber adjusted for any given load. It takes but a couple of men to position the supports and set up the forms. And S-L Spanall eliminates cumbersome timber shoring . . . provides the tremendous advantage of clear, unobstructed work areas on floor below . . . has a safety factor of 2.17 and substantially reduces the builder's fire hazard.

S-L Spanall is available immediately for sale or rent. Detailed information and consultation upon request. Please address your inquiry to Dept. R.



Stripping S-L Spanall supports from YMCA Annex in Syracuse, New York. With the web-plate sections telescoped into the lattice sections, S-L Spanall is conveniently stored or shipped for re-use elsewhere.

UNIVERSAL BUILDERS SUPPLY COMPANY, INC.

51 East 42nd Street, New York 17, N.Y.

For best results, each course of concrete masonry should be reinforced. Just unroll KEY-WALL and cut to length. Easy to cut. Easy to fit, where required. Four longitudinal wires reinforce each side, plus multi-directional wires throughout the joint. All wires are galvanized.

KEY-WALL

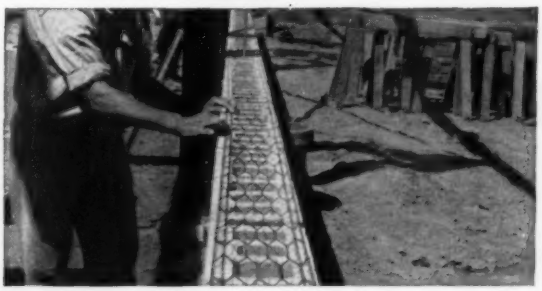
here's how you get **greater value:**

- *You get* effective *resistance to cracks.*
- *You increase lateral wall strength because you get the most efficient distribution of steel.*

These are facts developed in tests by the Research Foundation, University of Toledo.

here's how you get **lower cost:**

- *You save on material cost.*
- *You save on handling and storage (it's galvanized).*
- *You save on installation.*



Key-wall is made for the following wall thicknesses: 4", 6", 8", 10", and 12".

Key-wall is lapped at corners without adding thickness to the joint. Quick and easy to do. Provides exceptionally effective reinforcement of corner.

It is easy to build up reinforced corners with KEY-WALL. Short lengths may be cut and used without reducing effectiveness of reinforcement.

For long walls, KEY-WALL rolls out entire wall length without joints.

Mortar flows readily around KEY-WALL to give full embedment. Tests show an exceptional bond.

Masons like the ease with which block can be laid when they use KEY-WALL as reinforcement. The mesh helps hold the mortar in place.

a new type of masonry reinforcement that gives **greater value at lower cost**

FREE test report

AT LAST, tests reveal basic facts about reinforcement of concrete masonry. Take the problem of shrinkage cracks. "With KEY-WALL in each joint of the test wall, the largest crack was only one fourth as great as that in the unreinforced wall. As a matter of fact, most of the cracks in the wall reinforced with KEY-WALL in every joint were microscopic in size. This is clear evidence of the effectiveness of KEY-WALL as a means of resisting shrinkage cracking," the test report states.

What's more . . . you get better bonding with KEY-WALL.

There are many other advantages you get when you specify and use this revolutionary new product. It will pay to get all the facts.

KEYSTONE STEEL & WIRE COMPANY
Peoria 7, Illinois

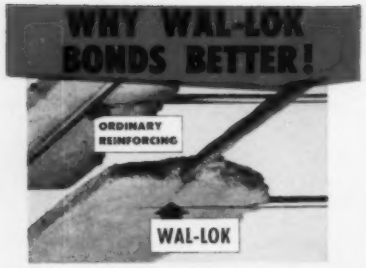
Please send me free sample and copy of KEY-WALL masonry reinforcing report made by the Research Foundation, University of Toledo.

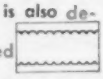
Name_____

Firm_____

Street_____

City_____ Zone_____ State_____



When a mason uses reinforcing in a masonry wall, he lays the reinforcing on the last course like this With ordinary reinforcing, all the wires are butt-welded in one plane. This allows the side bars to rest right on the blocks. Then the mason puts on his mortar. Steel doesn't float so, obviously, the mortar can't get under the side bars. So the mortar is only bonded to the top and sides. With Wal-Lok the Tie Rods are welded across the Side Bars. The mason puts Wal-Lok in the wall *with the Tie Rods DOWN* This holds the Side bars up away from the blocks, and the mortar completely surrounds each Side Bar With Wal-Lok, the mortar grips all the way around! When you try to hang onto a rod, you don't hold it with your finger tips You hold it in your fist with your fingers wrapped all the way around. Why expect mortar to do something you can't do? All Wal-Lok is also deformed and knurled  for a positive bond the full length. The value of any reinforcing depends *entirely* on its bond to the mortar.

All this while holding an overall thickness of 7/32".

WAL-LOK

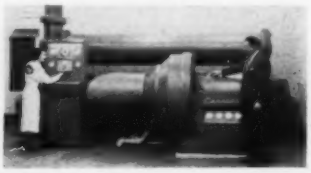
ADRIAN PEERLESS INC.
1406 E. Mich. St., Adrian, Mich.

PRODUCT REPORTS

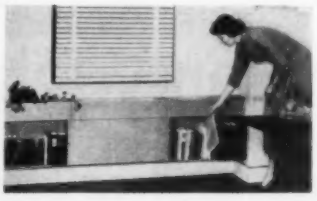
(Continued from page 302)

Large Air Conditioning and Refrigeration Systems have been increased by three major new *Carrier* products shown below:

Hermetic Centrifugal Refrigerating Machine, with compressor and electric motor hermetically sealed in a single shell, eliminates the need for foundations. A "stop-go" control button operates the unit automatically. Available in capacities from 100 to 325 tons, it is quiet and vibrationless and so can be installed on upper floors or on the roof.



Automatic Absorption Refrigerating Machine that uses the heat energy from steam to produce cooling is also operated automatically by a "stop-go" push-button and can be installed on upper floors or rooftops because of its relatively light weight and lack of moving parts. Available in capacities from 100 to 700 tons.



Central Air Conditioning for Existing Buildings is possible with a line of *Modular Weathermaster* units which are suspended from a mounting strip that can be attached to the wall across the window bay. A variety of enclosures in various dimensional modules, including the bookcase arrangement shown above, are available and need not interfere with present baseboards or electrical outlets. *Carrier Corp., Syracuse 1, N. Y.*

(Continued on page 310)

Good pencils mean BETTER TRACINGS and superior PRINTS

When big projects are at stake, use *Graphite Saturated*

IMPORTED CASTELL

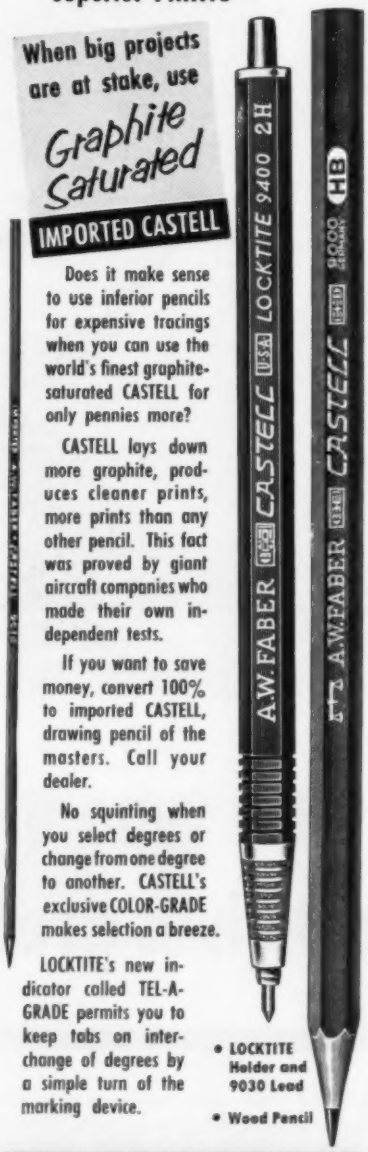
Does it make sense to use inferior pencils for expensive tracings when you can use the world's finest graphite-saturated CASTELL for only pennies more?

CASTELL lays down more graphite, produces cleaner prints, more prints than any other pencil. This fact was proved by giant aircraft companies who made their own independent tests.

If you want to save money, convert 100% to imported CASTELL, drawing pencil of the masters. Call your dealer.

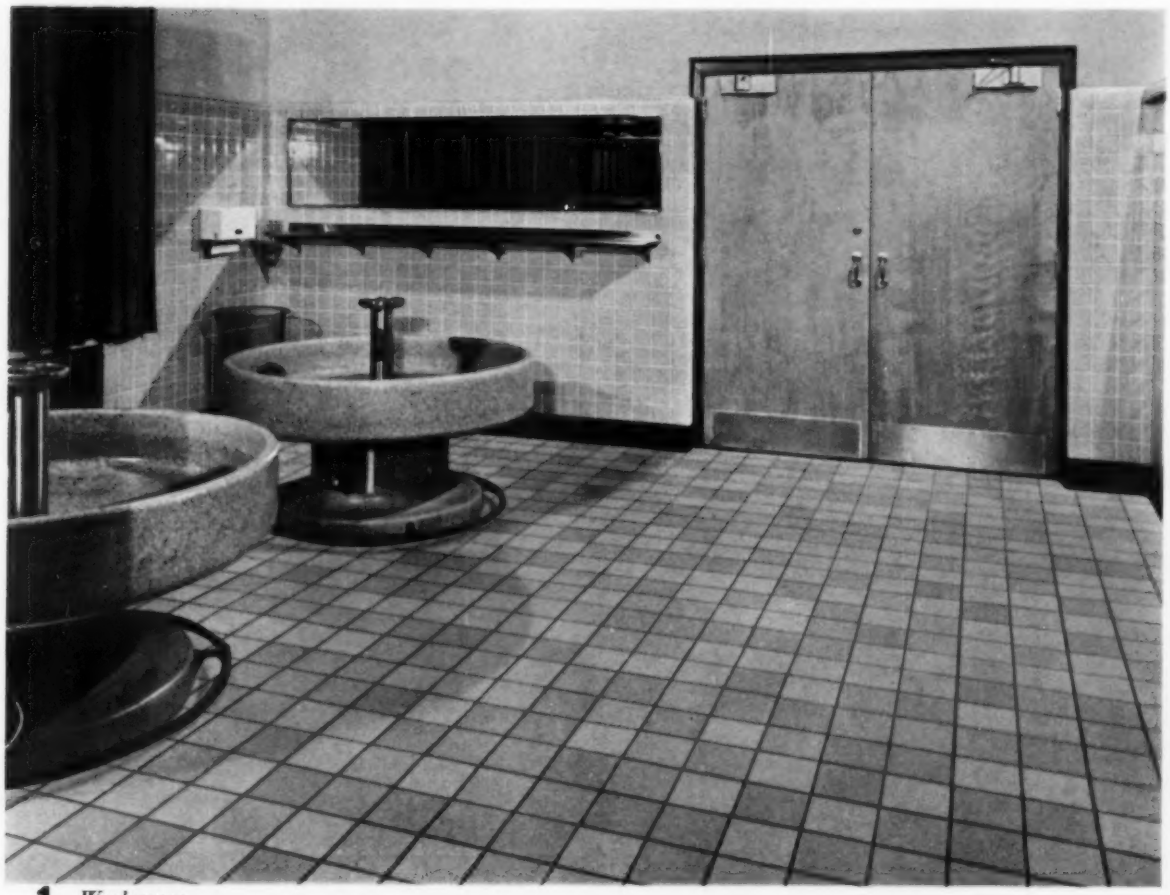
No squinting when you select degrees or change from one degree to another. CASTELL's exclusive COLOR-GRADE makes selection a breeze.

LOCKTITE's new indicator called TEL-A-GRADE permits you to keep tabs on interchange of degrees by a simple turn of the marking device.



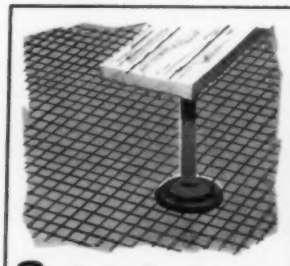
- LOCKTITE Holder and 9030 Lead
- Wood Pencil

A.W. FABER-CASTELL
PENCIL CO., INC. NEWARK 3, N. J.

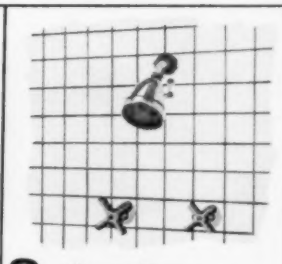


1. *Washrooms*

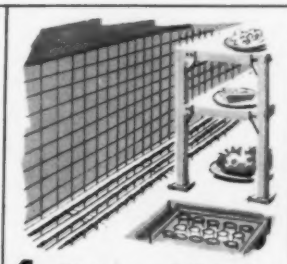
In schools . . . five key areas need tile



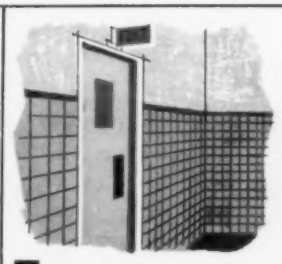
2. *Locker Rooms*



3. *Shower Rooms*



4. *Kitchens and Cafeterias*



5. *Corridors*

The beauty and durability of American-Olean ceramic tile make it a sound choice for many areas in a school. But in every school there are five key areas where ceramic tile is not only wise, but essential.

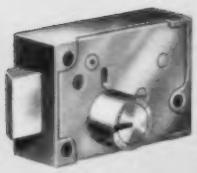
In washrooms, locker rooms, and shower rooms, tile's resistance to water damage, its ease of cleaning, and its rugged permanence are deciding factors. In kitchens and cafeterias, it cannot be harmed or stained by heat, grease, or spilled food, and it adds safety because it's fireproof. On corridor walls, pencil, ink and crayon marks wipe right off its smooth glazed surface.

Two free booklets. "Tile for Schools and Hospitals", and "Catalog of Tile Products", will be helpful in your planning. Won't you write for them today?

TILE SPECIFICATIONS FOR MAIN ILLUSTRATION
Color Plate 345, Washroom, Lake High School, Salisbury, Maryland. Architect, Edwin Wilson Booth. Walls: 28 Pearl Gray. Base: S-49 Gloss Black. Floor: Sand Buff Textone Pavers.

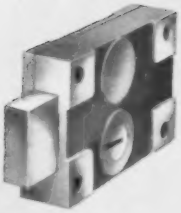
American-Olean Tile Company

Executive Offices: 1178 Cannon Avenue, Lansdale, Pennsylvania
Factories: Lansdale, Pennsylvania · Olean, New York · Member, Tile Council of America



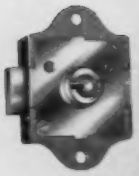
SAFETY DEPOSIT BOX LOCKS

SASH AND DOOR CONTROLS



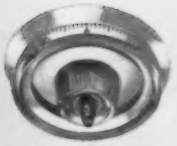
PRISON LOCKS

INSTITUTIONAL PRODUCTS



LOCKER LOCKS

COMBINATION PADLOCKS



SPY-PROOF DIALS AND RINGS

COMBINATION LOCKS

PRODUCTS FOR GOVERNMENT

CABINET LOCKS

PANIC EXIT DEVICES

WARDROBE HARDWARE

With a background of fine craftsmanship and precision lineage . . . and a foreground of modern design and manufacture, products from Sargent & Greenleaf are found in offices and buildings the world over. Specified by architects and hardware consultants everywhere, who recognize the authority of their design and the integrity of their craftsmanship . . . and who appreciate the larger measure of value of every product bearing the name Sargent & Greenleaf.

SARGENT & GREENLEAF, INC. • ROCHESTER 21, N. Y.

ALCOA BUILDING CUTS REST ROOM CLEANING TIME!

ZURN SYSTEM teamed with AMERICAN-STANDARD off-the-floor plumbing fixtures improve sanitation ... keep years ahead in design.

To match the pioneer aluminum curtain-wall construction of the Aluminum Company of America's 30-story Alcoa Building, Pittsburgh, its 109 rest rooms had to look and *be* completely up-to-date.

Floor-Free Design Specified. Floors completely free of fixtures were specified for each rest room . . . to create a feeling of space, a fact of cleanliness. Rest room sanitation is stepped up . . . yet cleaning maintenance is cut substantially. And, because this design is based on the only real *news* in rest room plumbing fixtures, it will look as fresh and modern during years to come as it does today!

Economy Confirmed. Edward C. Collins, Alcoa Building Construction Superintendent, confirms the practicality of off-the-floor design when he states:

"There was no question but that plumbing fixtures would be installed clear off the floor. It simplifies cleaning maintenance, and we can maintain constant cleanliness and sanitation in our rest rooms."

Installed Value. Yes, in new construction everywhere, rest rooms like those in the Alcoa Building prove that the best design is the most economical in the long run . . . with *installed value* that pays off in more rentable floor space, lower cleaning costs, construction and maintenance savings, tenant approval, added years of useful life.

For More Facts on The Zurn System and American-Standard off-the-floor fixtures—write for your free copies of "You Can Build It For Less A New Way" and "Better Rest Room Guide."

ZURN

THE ZURN SYSTEM®
J. A. ZURN MFG. CO.
Plumbing Division
Erie, Pa., U.S.A.

AMERICAN-STANDARD PRODUCTS

OFF-THE-FLOOR FIXTURES
AMERICAN-Standard
Plumbing and Heating Division
Pittsburgh, Pa., U.S.A.

This advertisement is sponsored jointly by the J. A. Zurn Mfg. Co., and the American Radiator & Standard Sanitary Corporation.

Harrison & Abramovitz, Chief Architects
Altenhof & Bown; Mitchell & Ritchey; Assoc. Architects
Sauer, Inc., Plumbing
Jaros, Baum & Bolles, Mech. Engrs.

Better, Faster Sanitation. A floor free of bowls, pedestals or drain pipes, speeds cleaning time up to 30% based on comparative time studies with old-style installations. More thorough sanitation too with no hard-to-reach corners or floor crevices.

Saves Material, Time, Labor. Zurn System rigidly supports off-the-floor fixtures from behind the wall . . . opens up a new world of better rest room design. Cuts installation and maintenance. No furring-in, floor reconstruction, unseen water seepage.

Mail coupon for new literature. Describes benefits of floor-free rest room design. There's no obligation, of course.

J. A. Zurn Mfg. Co., Dept. AZ-3
Erie, Pa., U.S.A.

Please send me free copies of "You Can Build It For Less A New Way," and "Better Rest Room Guide."

Name_____

Position_____

Company_____

Street_____

City_____ Zone____ State_____

Basic specifications available on the use of asphalt emulsions

BITUMULS® for:
Roads & Streets
Walks & Drives
Parking Areas

LAYKOLD® for:
Tennis Courts
Playgrounds
Roof Decks

Typical specifications are available on Bitumuls and Laykold products for every type of paving and surfacing application. *Get them from our nearest office.*

American Bitumuls & Asphalt Company

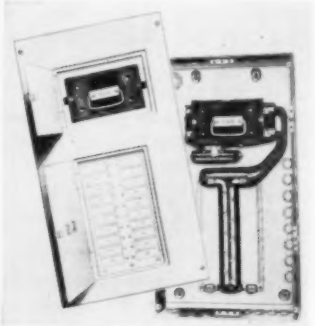
200 Bush Street, San Francisco 20, Calif. • Perth Amboy, N. J. • Baltimore 3, Md.
Mobile, Ala. • Cincinnati 38, Ohio • Columbus 15, Ohio • Tucson, Ariz.
Seattle, Wash. • Baton Rouge 2, La. • St. Louis 17, Mo. • Inglewood, Calif.
Oakland 1, Calif. • Portland 7, Ore. • Washington 5, D. C. • San Juan 23, P. R.

PRODUCT REPORTS

(Continued from page 306)

Decorator Showroom. A quality showroom and office space has been opened as the *Decorators Mart, 425 East 53rd St., New York, N. Y.*

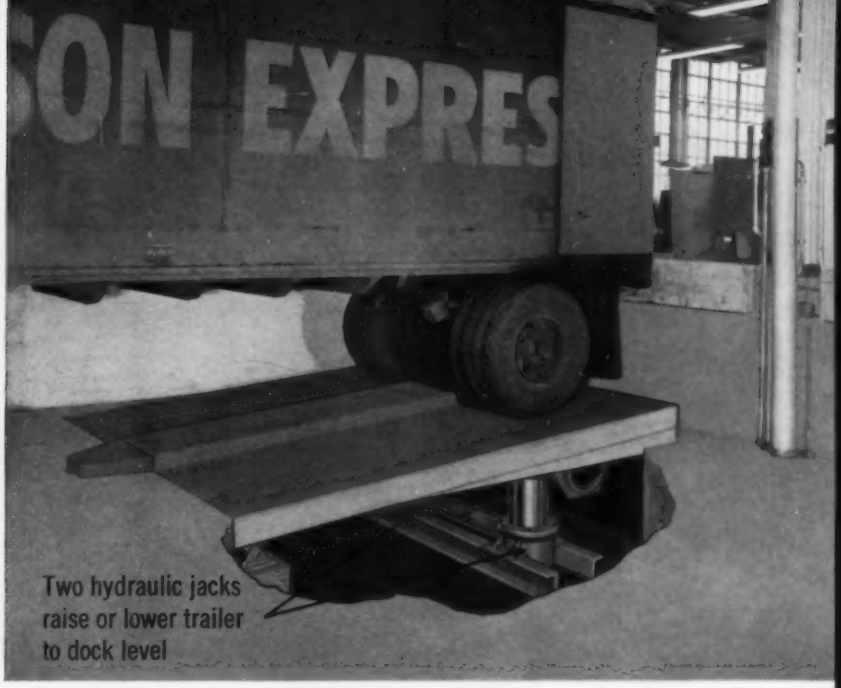
Audio-Visual Hospital System. *Visicall* electronic monitors ease a nurse's work load by making it possible for her to sit at her desk and get images on a television screen of the interiors of a dozen or more hospital rooms under her care. Camera units installed in the rooms transmit the images to the *Visicall* monitor in her office. Images of the room rotate at regular intervals on the *Visicall* but can be halted and retained at the will of the supervisor. A patient's room number, name and doctor's name flash on an illuminated strip with the picture. Through a speaker the nurse can carry on private conversations with patients in any of the rooms. *Sperti-Faraday Inc., Adrian, Mich.*



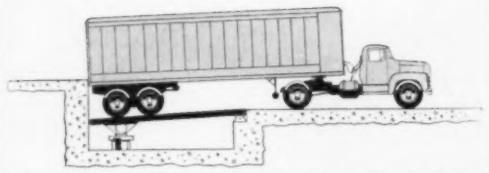
Circuit Breakers are combined with the advantages of fuses in a new unit which includes a 100-amp *Renu-Fuse Pull Cover* main disconnect and provisions for 12, 16 or 20 (as in photo above) *E-Z-Red* circuit breaker circuits. The unit is intended for 3-wire service, solid neutral, 120/240 volts a.c. The branch circuits will take breakers from 15 to 50 amp, and any two adjacent breaker positions can be double-pole. Two doors, shown in the photo above of the removable flush front, cover the main fuse unit and the circuit breakers. *The Wadsworth Electric Mfg. Co., Covington, Ky.*

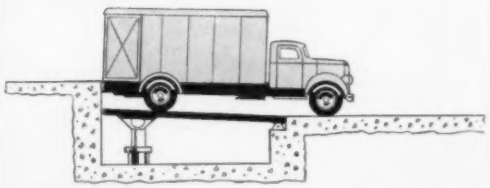
(Continued on page 314)

NEW ROTARY
Truck Leveler
SAVES DOCK SPACE
AND SPEEDS LOADING



Two hydraulic jacks raise or lower trailer to dock level


High truck beds are lowered to dock level


Low truck beds are raised to dock level

Hydraulic lift helps you design more efficient buildings
The new Rotary Truck Leveler, supported and moved by dual hydraulic jacks, raises or lowers the entire rear section of any highway carrier to bring the bed level with the loading dock platform. It has these important features:

Takes no space . . . installed in pavement in front of loading dock, leaving dock platform completely free of obstructions. Each Rotary Truck Leveler saves 96 sq. ft. or more of the building space required when a ramp is used.

Reduces to a minimum the incline angle between truck or trailer bed and dock. Materials handling equipment can move in and out with maximum speed and safety.

Handles any highway carrier at any loading dock. Has 40,000-lb. capacity and 28″ travel. Will never be made obsolete by changes in materials handling equipment.

Dependable, economical push-button operation by Rotary Oildraulic electric power unit, located wherever convenient. Practically maintenance-free.

Easily installed in shallow pit at new or existing buildings. Does not interfere with closing and locking of overhead doors.

Raised center curb section guides wheels onto runways for fast, accurate truck positioning.

The Rotary Truck Leveler is sold and installed by a nationwide organization. These specialists in hydraulic lifting devices can assist you on design and specifications for single or multiple unit installations. Dependability of the Rotary Truck Leveler is assured by Rotary Lift Company's experience in building over 100,000 oil-hydraulic lifts and elevators. Mail coupon for complete data.

SEE OUR CATALOG IN SWEET'S FILES

Rotary® **TRUCK LEVELER**

Manufactured by ROTARY LIFT CO., Memphis 2, Tenn.

Specialists in oil-hydraulic lifting devices

MAIL FOR COMPLETE DESCRIPTION AND ARCHITECT'S SPECIFICATIONS

Rotary Lift Co.,
1138 Kentucky, Memphis 2, Tenn.

Please send new catalog on the Rotary Truck Leveler to:

Name_____

Address_____

Carrier again makes news

"Research House" inspiration for $17,000 homes in Southern California

McDonald Bros. Weathermaker Village homes are built around air conditioning

Are homes without year-round air conditioning obsolete? You'd think so judging from the popular response to Weathermaker Village homes in West Covina, California. McDonald Bros. built them.

Instead of drawing up house plans and then adding air conditioning, McDonald Bros. had the foresight and good business sense to follow the design of "Research House" and build their homes *around* air conditioning. This is the Carrier Weathermaker Home idea.

In the Weathermaker Village home, cross ventilation is no longer needed. Furthermore, each home is weather-oriented. Sweeping overhangs, latticework and planted patios protect the glass walls from the California sun.

Weathermaker Village homes are more spacious. Open planning and the use of large glass areas extend the apparent size of the house, create within it a feeling of free-flowing space.

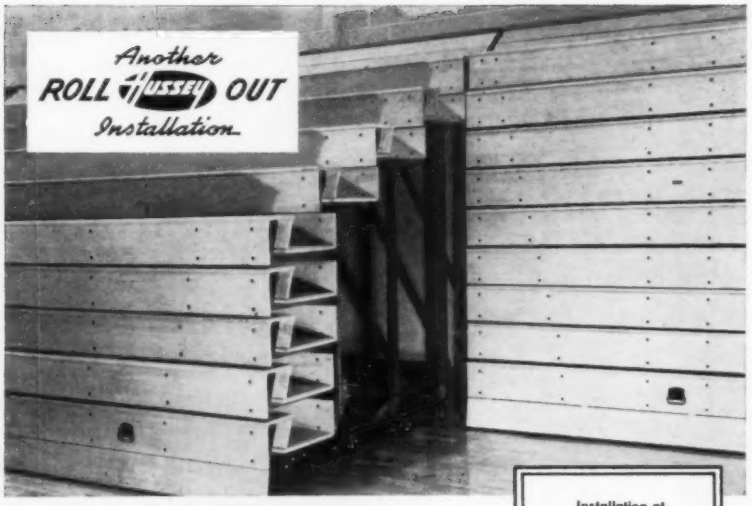
These are just a few of the refreshing innovations. When it was introduced in 1951, the Carrier Weathermaker Home concept launched a new era in all-year home comfort. To the architect, builder and realtor it means greater freedom for imaginative, functional designs. Designs for easy, gracious, modern living. Designs for homes of irresistible sales appeal.

If you'd like to hear more about the Carrier Weathermaker concept for building homes that sell, it's time to call Carrier. Carrier Corporation, Syracuse, New York.

Carrier

First Name in Air Conditioning

← "Research House"—Designed by Edward H. Fickett, A.I.A., around Carrier air conditioning, it inspired the McDonald Bros. homes of Weathermaker Village.



Installation at
Bendle High School
Flint, Michigan

720 Seats

One 73' Section
of 10 Tiers

Two 40' 6" Sections
of 3 Tiers

LOOK

at the Advantages of the NEW "All Closed" Deck Hussey "ROLL-OUTS"

Hussey space saving ROLL-OUT Gym Seats are more than just safe, comfortable, easy to operate and attractive in appearance. They are the result of years of research and combine the best features of conventional seating of this type with new, exclusive engineering advancements. They contribute to reduction in Public Liability Insurance Rates.

Hussey's exclusive "all closed" deck prevents litter collecting under the stand thus reducing fire hazard, makes it unnecessary to crawl under the seats to recover articles accidentally dropped, eliminates the sense of insecurity many persons have in the open type of deck, therefore are far safer than any other known design. With a Hussey "Roll-Out" the difficult, time consuming job of sweeping under the stand before closing is unnecessary—the seats can be rolled back against the wall immediately.

For seating satisfaction use Hussey "Specs." Our Seating Engineers are at your service without cost or obligation.

FOR SPECIFICATIONS, NAMES AND ADDRESSES OF REPRESENTATIVES, ETC. SEE SWEET'S '56 CATALOG 23J/HU OR WRITE, WIRE OR PHONE

IRONWORKERS HUSSEY SAFE SEATING SINCE 1835

HUSSEY MFG. CO., INC.

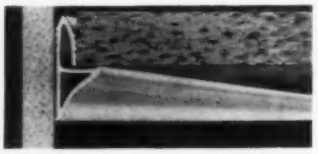
567 RAILROAD AVENUE NORTH BERWICK, MAINE

Other Hussey Products: Portable and Permanent Steel Grandstands and Stadiums — Steel Landing Piers — Swimming Floats — Diving Boards

PRODUCT REPORTS

(Continued from page 310)

Sealing Compound. *Warflex Sealing Tape* is a pressure-sensitive, positive sealing material that will adhere to all clean surfaces, including aluminum, porcelain, steel, glass and wood and will maintain a positive seal under all weathering conditions through an ambient temperature range of −65 F to 175 F. The tape is available in thicknesses from 1/16 to 5/8 in. and in widths from 1/2 to 2 in. Standard roll lengths vary from 10 to 50 ft. *Wm. A. Reynolds & Co., Inc., 4500 Euclid Ave., Cleveland 3.*



Vinyl Molding for acoustical tile installations is said to be faster and easier to install than any other cove molding. The flexible molding, with rough edges, is pressed into place and held firmly by its own tension, as shown in the drawing above. It can be used on curved walls and bent around column caps. Said to be shrink-proof and noncombustible, it requires no nailing, adhesive, puttying, retouching, maintenance, wood ground or painting, although it can be painted if desired. *A.Z. Bogert Co., West Point, Pa.*

Silencing Units. Prefabricated standard *Q-Ducts*, available in 148 sizes to meet every dimension and performance requirement, can be fitted into an air conditioning system during the design stage to reduce duct noise. The correct units for particular systems can be selected from data sheets containing information on noise reduction, pressure drop and size of unit. The Q-Duct construction, shown above, installed in a standard duct can, it is said, provide as much noise control in a length from 2 to 10 ft as a conventional lined duct from 30 to 100 ft long. *Industrial Acoustics Co., Inc., 341 Jackson Ave., New York 54, N. Y.* *(Continued on page 318)*

MICARTA ENHANCES FUNCTIONAL DESIGN OF BRUNSWICK SCHOOL FURNITURE

Brunswick's new line of classroom furniture is both uniquely flexible and exceptionally durable—and much of the credit goes to its MICARTA surfacing.

Brunswick specified MICARTA because this attractive, super-tough plastic makes an ideal work surface for all kinds of school activities from writing or painting to food preparation. This is because MICARTA offers amazing resistance to scuffs, scratches, stains and burns. It's a material that never needs waxing, polishing or refinishing. It cleans to a gleam with the swish of a damp cloth.

There are many applications for durably beautiful MICARTA in every school. On table tops, desk tops, counters, chairs, walls or wainscoting, its hard working properties will continually return substantial savings in upkeep costs. Look into this cost-saving opportunity today. Simply use the coupon. J-06603

This is Westinghouse micarta for SCHOOL APPLICATIONS

Classroom furniture by Brunswick-Balke-Collender Company in use at Southwest Elementary School, Evergreen Park, Illinois.

Westinghouse micarta®

distributed by | UNITED STATES PLYWOOD CORPORATION
largest plywood organization in the world

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55 West 44th St., New York 36, N. Y.

Please send full information on MICARTA for school applications.

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Address _____

City _____ Zone ____ State _____

ONE OF A SERIES | *how prominent architects use* **TECTUM**

city convenience in the country... the integrated shopping center

by C. Melvin Frank

Architect: C. Melvin Frank, A. I. A. Columbus, Ohio

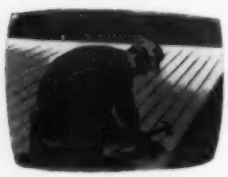
WITH THE GROWING TREND to country living, there has been a decided need for a variety of conveniently located shops. Erected independently in a given area, the result most often is that of incongruous hodge-podge. The solution to this came in the form of the shopping center with its homogeneous flow of line and a proximity of shops that provide the utmost in shopping comfort.

A leader in the design of shopping centers is C. Melvin Frank of Columbus, Ohio. His shopping centers—16 are completed or under construction—reach from the East Coast to Kansas City, Missouri. A pioneer in the use of Tectum, Mr. Frank's centers alone account for nearly 4,000,000 square feet. Town and Country Miracle Mile in Columbus, Ohio, was constructed in 1952, ultimately used more than 200,000 square feet. The latest of Mr. Frank's shopping centers, Truman Corners Town and Country Shoppers' City in Kansas City, calls for 600,000 square feet of Tectum.

Chances are that versatile Tectum can be used to great advantage in a building of your design—whether it be a commercial building, a plant, an institution or a home. Easily installed Tectum, in a single plank, serves four basic needs—it's a noncombustible roof deck; it furnishes both thermal insulation and sound control—and is a finished ceiling as well. For your next building project, consult your nearest Tectum distributor or Sweet's files, 2e/Te.

Toledo Miracle Mile Shoppers Mart, one of two shopping centers in the Toledo area designed by Mr. Frank. The other, Toledo Great Eastern Shoppers' City, is presently under construction. Combined, these shopping centers will use a total of 520,000 square feet of Tectum.

Town and Country Shopping Center at Monroeville, Pa., was constructed in 1954. Latest in the Pittsburgh area is Northern Lights Shoppers City, Conway. Combined, they used a total of 610,000 square feet of Tectum.

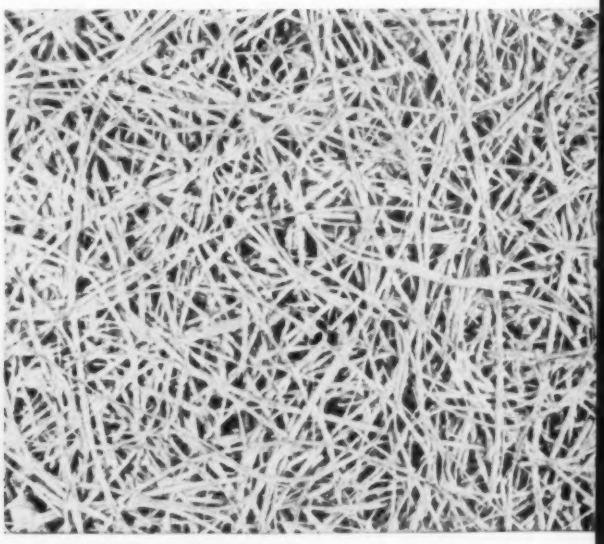


why lay a roof deck...

cover it with insulation...

Truman Corners Town and Country Shoppers' City, Kansas City, Missouri. This, as other shopping centers shown here, was designed by C. Melvin Frank and developed by Don M. Casto-Don M. Casto, Jr., all of Columbus, Ohio.

Tectum is shown being installed at Great Western Shoppers' Mart in Columbus, Ohio. Approximately 5,000 square feet of deck were laid in less than 3 hours. Planks were nailed to bar joists and deck was roofed in as laid. 350,000 square feet of Tectum was used.



and add acoustical material...

when you get all 3 with the

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General offices: 208 South 6th St., Newark, Ohio
Distributors in principal cities.

Terrazzo

and the National Institutes of Health have a common goal: long life

Like many institutions interested in trouble-free floors, the NIH in suburban Washington chose Terrazzo. All-time favorite for long-time service, Terrazzo meets the most rigorous standards of design, construction and ease of maintenance. No matter how extensive the traffic, Terrazzo stands up to it, presenting a smooth and jointless surface easy to keep spotless.

Useful for floor, baseboard, wainscot or stairway, Terrazzo's life expectancy equals or exceeds that of the building of which it becomes a permanent part. Specify marble-hard, concrete-durable Terrazzo for low annual cost, for versatility, for longevity. Free AIA Kit upon request. See our catalog in Sweet's.

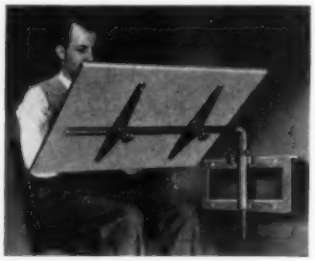
THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

404 SHERATON BUILDING, 711 14th ST., N. W. WASHINGTON 5, D. C.

PRODUCT REPORTS

(Continued from page 314)

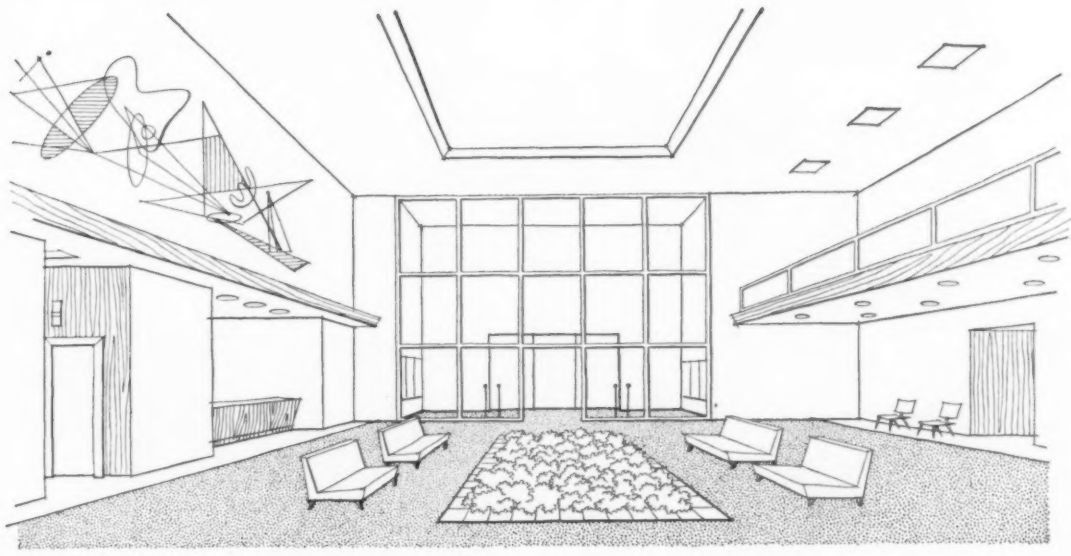
Modular Projection Scales for brick, tile and block are designed in such a manner that they can be used like architects' or engineers' scales. They make it possible to establish or determine the correct dimension for any wall height, opening, etc., without having to calculate horizontal brick courses in the height desired. Modular Grid Scales for use in the preparation of drawings are also available from *Palmer Mfg. Co., 4310 N. Pershing Dr., Arlington, Va.*



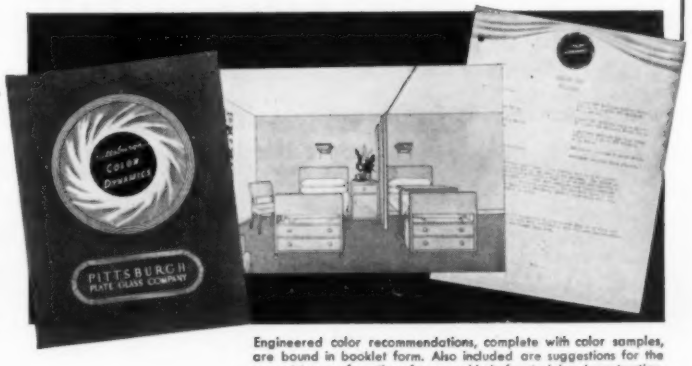
Space-saving Drafting Table swings flat against wall when not in use. Natural redwood bracket mounts on wall studs; castings are finished in medium gray enamel. Drafting boards (optional) up to 31 by 42 in. can be used. Swivel attachment allows board to turn and lock in any position. *Art Engineering Associates, 3505 Broadway, Kansas City 11, Mo.*

Residential Air Conditioning. The *Central*, a packaged, self-contained, air-cooled system that can cool an entire house up to 2200 sq ft, can be located in the attic, utility room, basement, crawl space or outside the house. Available in 2- and 3½-hp sizes, it can be connected to furnaces for operation in conjunction with a warm-air heating system and existing ductwork or installed with its own duct system. A low-voltage thermostatic control is standard equipment. *Amana Refrigeration, Inc., Amana, Iowa.*

(Continued on page 322)



Why not add a comprehensive
Engineered Color Study to your plans?



Engineered color recommendations, complete with color samples, are bound in booklet form. Also included are suggestions for the correct types of coatings for every kind of material and construction.

TODAY, nearly everyone who owns or operates an industrial, commercial or service enterprise recognizes the importance of the effect of color environment on people.

● **You can often make** your plans more acceptable to clients by including a detailed color program. Why not let us submit *engineered* color recommendations to go with your plans? These recommendations are based upon the principles of COLOR DYNAMICS, Pittsburgh's modern painting system which has demonstrated its ability to improve productive efficiency, morale and well-being in many fields.

● **We'll be glad** to make such a detailed study without cost or obligation to you. Simply call your nearest Pittsburgh Plate Glass Company branch and arrange to have one of our color experts see you at your convenience. Or mail this coupon.

Additional information on COLOR DYNAMICS in Sweet's Architectural File, Section 14/Pi.

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Gentlemen:

☐ Please have your representative provide us with further information about Pittsburgh's Free COLOR DYNAMICS engineering service for architects.

☐ Please send free copy of your booklet on COLOR DYNAMICS for ____industry; ____hospitals; ____schools; ____commercial buildings.

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Engineer & Builder:
The Byrum Construction Company

229,000 Sq. Ft. of Cofar on Wheeling's Wharf Municipal Parking Deck. 3½" concrete slabs, on spans of 6'9", were used on this job now under construction.

Cofar® concrete slabs make

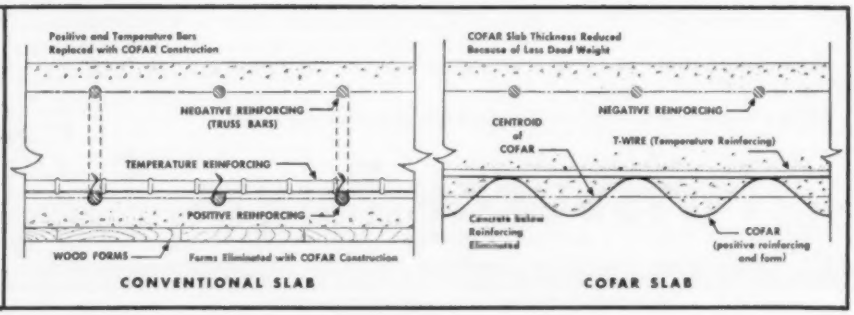
Money-saving Cofar combines form and reinforcing into one quick and simplified operation for floor construction

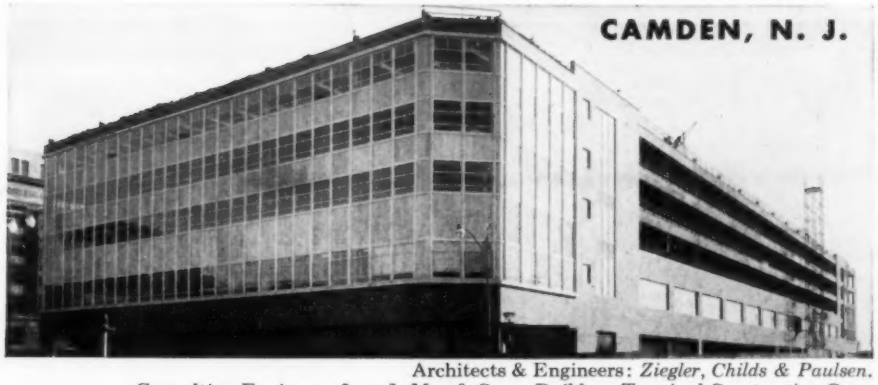
Cofar is making huge savings for designers, contractors and owners of parking decks. By combining form and reinforcing operations into one quick step, Cofar cuts out the time, material and money normally expended in old-fashioned form work.

Cofar is deep-corrugated, high-strength galvanized steel with heavy wires welded across the corrugations. The units make a tight form for wet concrete and provide the main positive reinforcement when concrete has set. The transverse wires supply temperature reinforcement and interlock the concrete to the steel units.

Cofar units are welded to the main structural framing members. At once, they make a working deck for all trades. Prior to concreting, negative steel is set over structural framing members for continuity. On Cofar spans over seven feet, one or two rows of temporary supports are needed. After concrete is placed, a fire-resistant, high-strength reinforced concrete floor results.

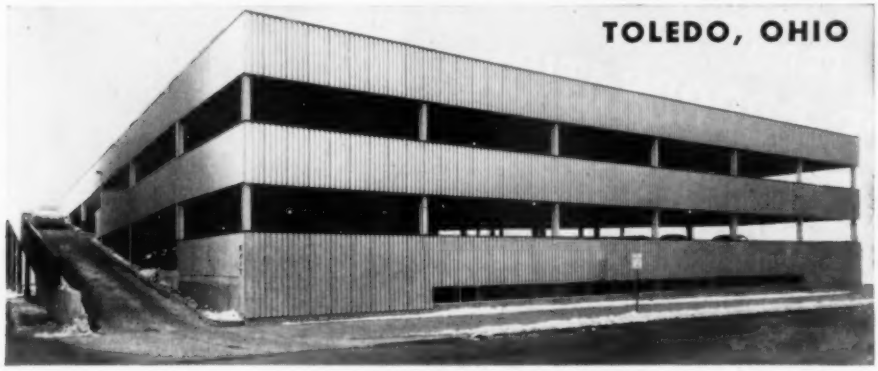
COMPARISON OF CONVENTIONAL AND COFAR SLABS





326,000 Sq. Ft. of Cofar on 6′ 6″ spans were used on the Parkade, Camden's new parking deck and office building.

Architects & Engineers: *Ziegler, Childs & Paulsen.*
Consulting Engineer: *Lars I. Moe & Sons.* Builder: *Terminal Construction Corp.*



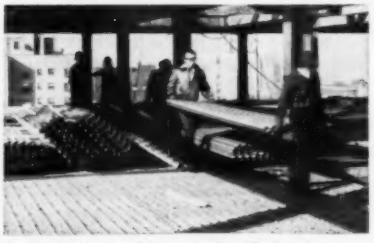
62,000 Sq. Ft. of Cofar on 9′ 0″ spans forms and reinforces the 3½″ concrete slabs of the four floors of Toledo's new City Hall Realty Parking Deck.

Architects: *Samborn, Steketee and Associates, J. H. V. Evans.*
Contractor: *Geo. W. Lathrop & Sons, Inc.*

parking decks pay off sooner

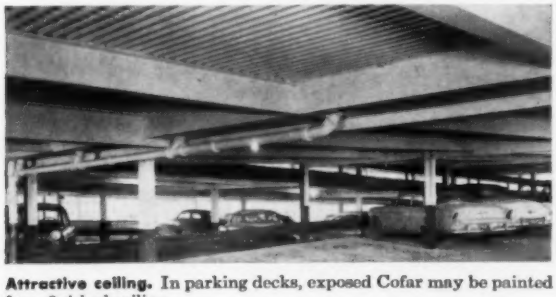
On-the-job photos show Cofar advantages

Pre-cut for immediate use. Cofar comes to your job shop-cut to length and in marked bundles to reduce sorting and handling.



Immediate working deck. Cofar forms a solid, safe, sheltered working deck for all trades.

Quickly and easily placed. Cofar units are welded in seconds to steel framing members.



Attractive ceiling. In parking decks, exposed Cofar may be painted for a finished ceiling.

See our listing in Sweet's Catalogue or write Granco's home or district office, Dept. R-62, for more information.

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Flexon Expansion Joint Design Guide

These handy guides contain full specifications and detailed application data on Flexonics' "Complete Package" for expansion control. Simplify your job — send for them today. There is no obligation.

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When your specification problem is piping expansion control, Flexonics Corporation provides a complete package of answers. Flexonics Corporation manufactures low pressure expansion compensators for horizontal runs in baseboard heating lines . . . high pressure compensators for steam and hot water risers and horizontal runs . . . and FLEXON® Expansion Joints in a wide range of types and sizes for power and process piping.

Every unit in the FLEXON® "Complete Package" has been specially engineered to eliminate the danger of uncontrolled expansion, the objectionable noise of pipe creeping and to give you long maintenance-free service. Easily installed, they are space savers that require no access panels because they require no packing—for the life of the piping system. Specify "Flexon" with confidence.

For further information write for the descriptive bulletins illustrated.

FLEXON® QUALITY
proved in service and backed by over 54 years manufacturing experience

EC-17

Flexonics *Corporation*
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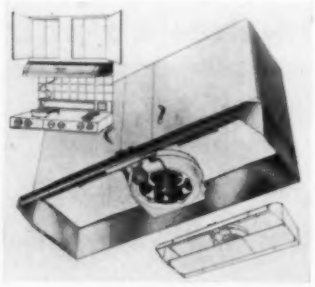
1366 S. THIRD AVENUE, MAYWOOD, ILLINOIS
FORMERLY CHICAGO METAL HOSE CORPORATION
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

PRODUCT REPORTS

(Continued from page 318)

King-Tab Architect Shingles have an 18-in. tab instead of a 12-in. tab. Said to give longer, cleaner rooflines because of one-third fewer cutouts, they have great wind resistance because they are heavier than 12-in. tabs and take two nails per tab. Although the tab size has increased, the over-all size of each shingle strip remains 15 by 36 in. *Bird & Son, Inc., East Walpole, Mass.*

Drawing File. The *Universal Tubefile* accommodates drawings, tracings and maps up to 78 in. Cabinets are of furniture steel and tubes of heavy-grade smooth fiber. Locking devices assure complete confidential protection. *Scott-Rice Co., 610 South Main, Tulsa, Okla.*



Ventilator Hood. The *Fasco Powerhood* has a snap-on ventilator on the underside of the hood so that there is no loss of cabinet space because of ventilator or duct installation. The metal hood, under which the impeller wheel and light are concealed, adjusts to fit the underside of any cabinet or row of cabinets from 30 to 42 in. long. It comes in white, copper or stainless steel finishes. A pushbutton panel on the face of the hood controls the unit's three speeds and the light. *Fasco Industries, Inc., Rochester 2, N. Y.*

(Continued on page 326)

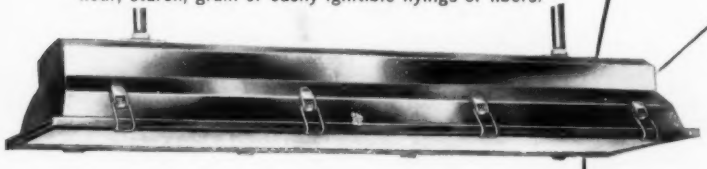
remember these 3

specialized Wheeler fixtures for hazardous • non-hazardous locations

DUST-TIGHT

For Class II — Groups F & G, & Class III Requirements

For atmospheres containing carbon black, coal, coke, flour, starch, grain or easily ignitible flyings or fibers.



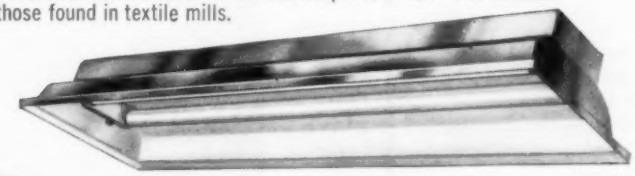
VAPOR-TIGHT

Designed for use in locations where extreme dirt conditions, high moisture content, acid or alkaline atmospheres are prevalent.

TEXTILUME

WHEELER RLM

Specifically designed for maximum corrosion resistance when used in humid atmospheres such as those found in textile mills.



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For the first time, 2-LAMP, 90 WATT UNITS in Dust-Tight, Vapor-Tight and Textilume lines!

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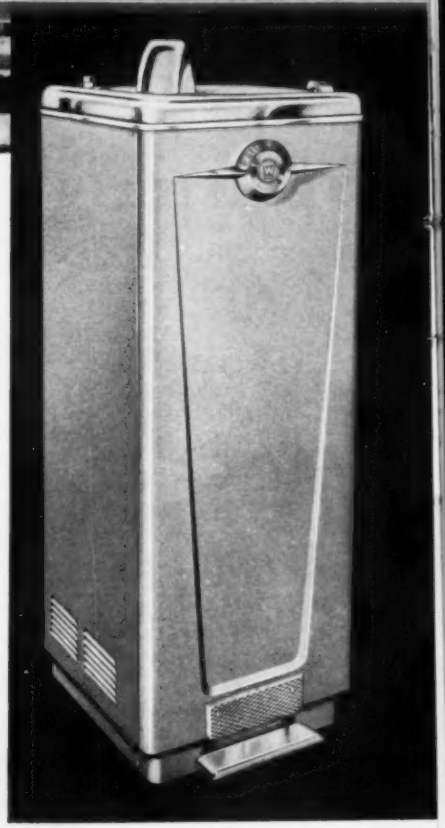
For America's ever-expanding Age of Aviation, huge twin-engine transport helicopters will be produced at the new Sikorsky plant for Army, Marine, commercial use.

New Sikorsky Helicopter Plant, Stratford, Connecticut

Architects Fairbrother and Miehls made sure that *everything* about this new multi-million dollar plant reflects the dynamic, progressive nature of the company that operates it . . . the Sikorsky Aircraft Division of the United Aircraft Corporation.

Architecturally, as well as in landscaping, the new plant blends with the surrounding theme of the areas adjacent to Connecticut's Merritt Parkway, one of the finest in the country. *Spacious* . . . 800,000 square feet, providing plenty of elbow-room for fast, efficient production and further expansion. *Comfort-planned* . . . completely ventilated, light-conditioned and sound-proofed.

And . . . for the *daily refreshment* of the 4,500 men and women who work here, architects Fairbrother and Miehls specified *Westinghouse Water Coolers.*

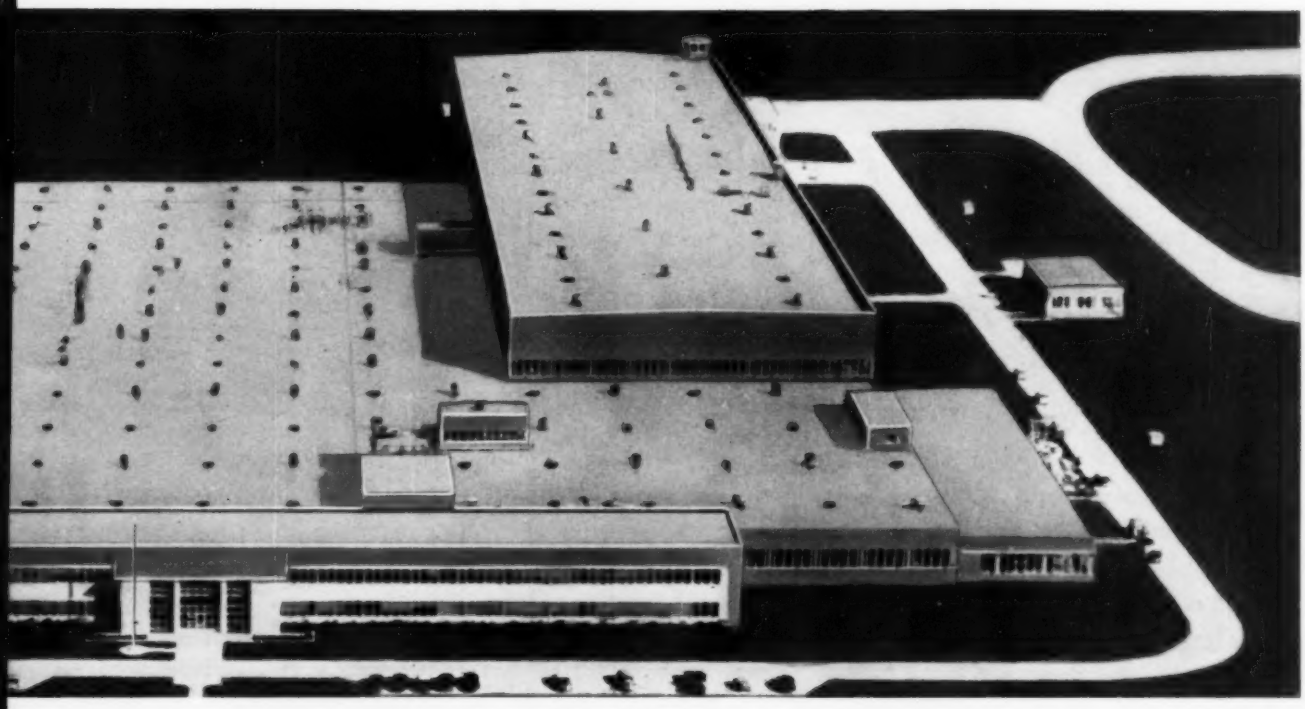


EXACTLY THE RIGHT TYPE AND SIZE FOR EVERY NEED

MIC... by design

Designed by Fairbrother and Miehls, Detroit

Built by E&F Construction Co., Bridgeport, Conn.



Today, wherever big things are happening—in the nation's most dynamic factories, stores, offices and institutions—that's where you'll find Westinghouse Water Coolers. For . . . *by design* . . . they fit in best. They're more . . .

Efficient . . . Westinghouse Water Coolers deliver up to 60% more cool water at less cost — thanks to the patented Pre-Cooler and Super Sub-Cooler that use cold water to pre-cool incoming water and sub-cool the hot liquid refrigerant.

Convenient . . . Only Westinghouse offers Dual Electric Control—both finger-tip and toe-tip control at no extra cost . . . plus Automatic Stream Height Regulator for no-spurt, no-splash drinking.

Dependable . . . Westinghouse Solenoid Water Valve eliminates all possibility of leaks . . . Hermetically sealed Refrigeration System assures more years of trouble-free performance. All models backed by Westinghouse 5-Year Guarantee Plan.

Compact . . . Handsome, space-saving design occupies only 14" x 14" floor space. Stainless steel, splash-proof top is sanitary, unbreakable.

Put Westinghouse in your plans . . . specify the *newest* and *finest* of water coolers for your clients. With 18 models to choose from, there's a right type and size for every need. Call your Westinghouse Water Cooler Distributor today . . . ask him for a FREE PAY-WAY COMPUTOR . . . and learn how Westinghouse Water Coolers can pay for themselves.

SEE OUR CATALOG IN SWEET'S

Westinghouse Electric Corporation
Electric Appliance Division
Springfield 2, Mass.

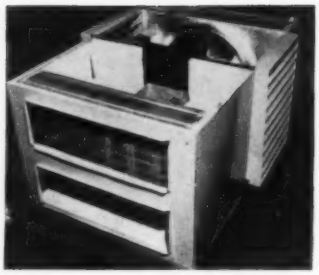
YOU CAN BE SURE... IF IT'S Westinghouse

PRODUCT REPORTS

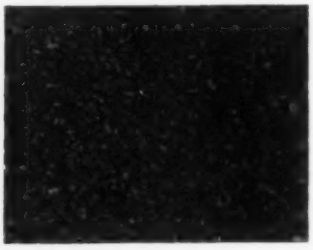
(Continued from page 322)

Electric Water Heater, automatic and rust- and corrosion-proof, has a *Permastone* cement lining ¼ in. thick on all sides, top and bottom and is available in 50-gal (WC-51) and 80-gal (WC-81) capacities. The new model includes an automatic thermostat which is adjustable from 120 F to 180 F and a hot water trap which prevents hot water from circulating until the faucet is turned on. *Hotpoint Co., 5600 W. Taylor St., Chicago 44, Ill.*

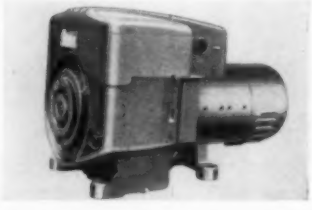
Stowaway Air Conditioner for residential use is a completely hermetic, horizontal, air-cooled unit said to have greater cooling capacity than other units of comparable size and to use less electric power than the same size water-cooled air conditioner equipped with a tower. Available in 2-, 3- and 5-ton capacities, the Stowaway boasts a new device called the *Power Prop* which, it is claimed, moves 25 per cent more air at 10 per cent less cost than the most efficient centrifugal blower formerly used on an air conditioner of comparable capacity. Double-inlet evaporator blower and



smooth-coated Fiberglas insulation, shown in photo above, contribute to maximum air-handling efficiency and quietness of operation. The unit can be installed in attics of all types, furred-down ceilings, on the roof, in the basement wall or outside *Lennox Industries Inc., Marshalltown, Iowa.*



Black Granite, called *Charcoal Black,* has small white flecks and excellent fabricating characteristics, so will be approximately 20 per cent less expensive than other black, contrasty architectural granites, according to the producer, *Cold Spring Granite Co., Dept. KP, Cold Spring, Minn.*



Electric Generating Plants (Models 305CCK and 5CCK), in 3500- and 5000-watt a-c sizes, are available in 50- or 60-cycle; 115-, 230- or 115/230-volt, single-phase; and 230-volt, three-phase, three-wire series for heavy duty. Both models are 21⅛ in. wide and 20¾ in. high, with lengths of 26⅜ and 29⅞ in., respectively. Both are direct-connected to two-cylinder gasoline engines and are available in standard remote control, portable or manual starting models. *D.W. Onan & Sons, Inc., Minneapolis, Minn.*

(Continued on page 330)

IN STEP with advanced school design...

HAWS Deck-Type Drinking Fountains meet the demands of your school building program for improved water facilities inside the class room! Your choice of optional combinations of HAWS Faucets and Fixtures make these fountains adaptable to *all modern classroom needs.* Teachers and students alike, benefit from HAWS!

Series 2400
Model 2444

Series 2000
Model 2050

Series 2300
Model 2350

FEATURES

Shielded, angle-stream, anti-squirt fountain head.

Automatic stream control valve.

Vandal-proof socket flanges and lugs.

Series 2200
Model 2255

For the **latest** school design...

Specify the **latest**... HAWS DECK-TYPE DRINKING FOUNTAINS!

Write today... for the New HAWS Catalog!

In addition to the complete line of fountains, HAWS also features electric water coolers and emergency eye-wash fountains... and, **KRAMER FLUSH VALVES,** for all plumbing fixtures that require an automatic closing valve.

HAWS DRINKING FAUCET CO.

1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

This plastic building material is translucent—yet has outstanding structural strength!

Reinforced Plastic Panels were in the experimental stage only a few years ago. Today these panels are established as standard building materials for both new construction and remodeling... as versatile as the imaginative designs of architects and builders.

Molded of fibrous glass blended with polyester resins, the panels are light in weight—yet have outstanding structural strength. They resist shattering, weathering, corrosion, denting—are easy to cut and fabricate—ideal for indoor and outdoor application.

Available in attractive, built-in colors; they need no painting or finishing. Supplied in a wide range of sizes, both corrugated and flat, the panels are translucent—permit passage of a soft, diffused light.

New developments in materials and processing techniques are rapidly broadening the uses of plastics. Many of these developments are already appearing in homes and buildings across the country. Others—still in the exploratory stage—are a forecast of the future... a hint of the versatility of all plastics.

Present and future uses of plastics in building and construction are under constant study by Monsanto's Structural Plastics Engineering Group. Check with them for expert technical advice on *Plastics in Building.*

A NEW REPORT, "Plastics in Housing," has recently been published by the Department of Architecture of The Massachusetts Institute of Technology. The M. I. T. study was made possible by a Monsanto grant-in-aid. Copies are available at $2.00 each. Address Monsanto Chemical Company, Plastics Division, Room 234 Springfield 2, Mass.

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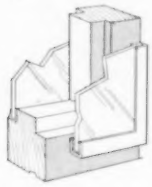
WOOD CASEMENT WINDOWS

Eliminate these 6 window chores

1 PUTTING UP AND TAKING DOWN SCREENS
2 PAINTING AND REPAIRING SCREENS
3 STORING SCREENS
4 PUTTING UP AND TAKING DOWN STORMS
5 PAINTING AND REPAIRING STORMS
6 STORING STORMS

ROLSCREENS simply roll up and down like window shades...store in neat-compartments at window top. The home owner is forever rid of seasonal chores. And, no costly storage space is required.



DUAL GLAZING...the self-storing storm window... stays in place the year 'round. It insulates against summer heat as well as winter cold. Reduces street noises, too. A swing-out hinge allows exterior glass to be washed from indoors.

PELLA CASEMENTS are completely factory assembled, reducing installation costs. Wood-lined steel frames combine beauty, strength and insulating qualities.

Ventilating sash glass sizes up to 24" in width and 60" in height. Stainless steel weather-stripping seals out dust and drafts. See our catalog in Sweet's. Distributors in principal cities of United States and Canada.

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PELLA, IOWA

Gentlemen: Please send me:
☐ **Free "Library of Window Ideas," a helpful 20-page booklet.**

FIRM NAME

ADDRESS

CITY ZONE STATE

ATTENTION MR.

PRODUCT REPORTS

(Continued from page 326)

TV Amplifier. A new, low-noise model DA8-B distribution amplifier, which provides eight isolated TV outlets with over 10 db all-channel gain, supplies master TV systems for garden apartments, motels, TV showrooms, deluxe home installations and other small layouts. It requires no tuning, matching devices or special fittings and is approved for color TV as well as black and white. *Blonder-Tongue Laboratories, Inc., 526–536 North Ave., Westfield, N. J.*

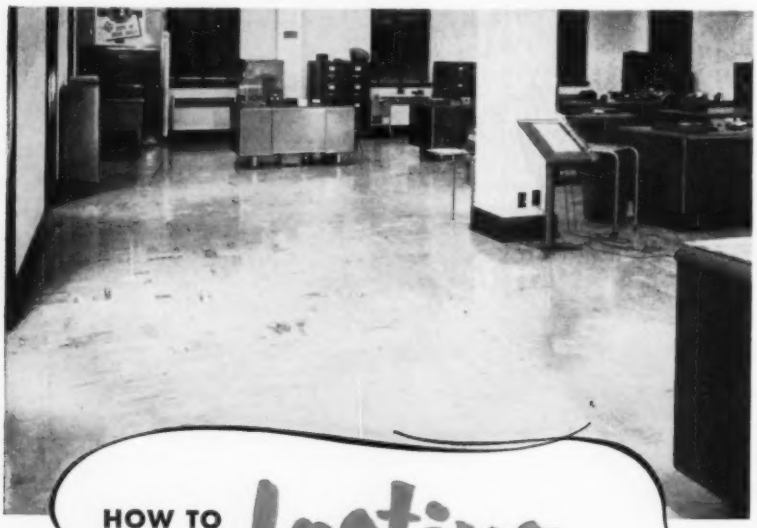
Genesi Wall Sculpture. The sculpture shown at right, "City Stonemural," is an example of a new type of sculpture in which the basic material is a lightweight aggregate masonry. This is cast in the desired design, and the resulting rough texture, like weathered stone, is set off by other materials, like brass, wood and glass, for contrast. The pieces vary in thickness from 1 to 4 in. and can be used as part of a new wall or installed on existing walls by securing on clip angles. Examples are on exhibit at *E. A. Rothman Associates, 17 East 48th St., New York, N. Y., and Georg*

Jensen Inc., 667 Fifth Ave., New York, N. Y.

Sliding Door Hardware that accommodates both ¾-in. and 1⅜-in. doors is packaged in a *Thriftee Pak* and includes an extruded aluminum track; four heavy steel hangers with 1-in., self-lubricating nylon wheels; and two steel door guide plates with nylon inserts, one for ¾-in. doors and the other for 1⅜-in. doors. The hangers, which have different depths, are simply interchanged to different positions for the two door sizes. *Sterling Hardware Mfg. Co., 2345 West Nelson St., Chicago 18, Ill.*

Multi-color Lacquer. *Zolatone* has been expanded so that new paint "Tadpoles" can be added to any multi-color combination and sprayed onto any properly prepared surface to create a coarse pattern that is colorful and tough. It is said to be dirt- and grim-repellent and scrubbable. It is available in 6000 custom and stock multi-colors ranging in degrees to extra fine. *Paramount Paint & Lacquer Co., 3411 E. 15th St., Los Angeles, Calif.*

(Continued on page 334)



HOW TO SPECIFY *lasting* FLOOR BEAUTY

Will you consider your job is completed when you deliver that next building with its bright, gleaming floors?

Or will you really *finish* the job by specifying a proven METHOD of floor care to preserve that "new floor" beauty, year after year?

The famous MULTI-CLEAN METHOD reduces cleaning time and adds many years of floor life at the same time it is preserving beauty. It is a *complete*, scientific program calling for use of the *right* machine, the *right* material, and the *right* technique.

Sweet's Architectural File contains descriptions of MULTI-CLEAN's complete line of floor machines, scrubbing machines, vacuum cleaners, and liquids. *Sweet's* also contains detailed specs you can use for prescribing future care of wood, concrete, terrazzo, linoleum, asphalt and rubber tile.

Let your local MULTI-CLEAN representative serve as your expert floor consultant. You'll find his name in *Sweet's*, too. Call him or write Department AR-46, Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn.

MULTI-CLEAN Method

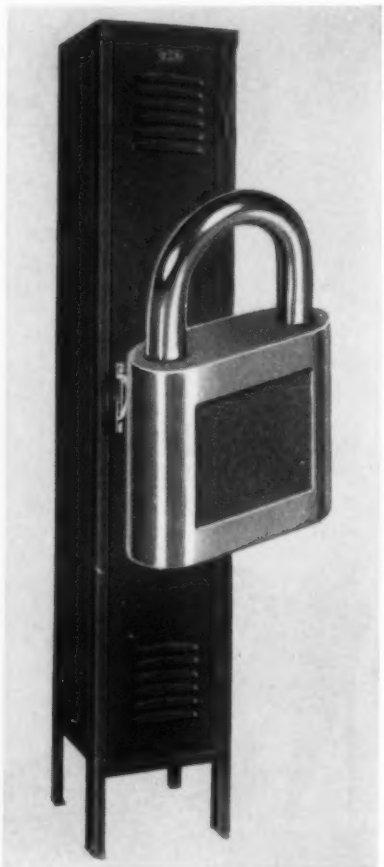
Outlets all around the house provide for family's varied telephone needs.

Weatherproof jacks and portable telephones for porch or terrace.

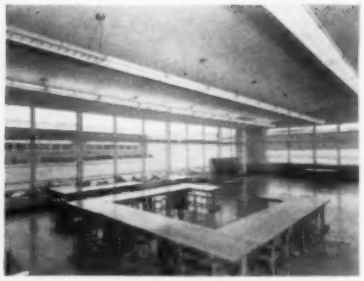
Few home features mark your thoughtful attention to detail so convincingly, in the eyes of home buyers, as (1) concealed telephone wiring and (2) conveniently located telephone outlets.

BELL TELEPHONE SYSTEM

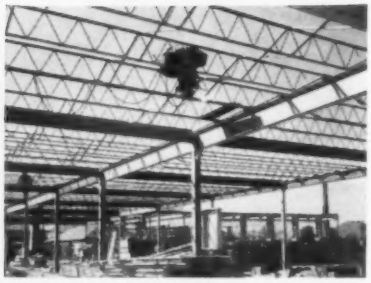
Your Bell telephone company will be glad to help you plan economical concealed wiring installations. Just call the nearest business office and ask for *"Architects and Builders Service."* For details on home telephone wiring, see Sweet's Light Construction File, 8i/Be. For commercial installations, Sweet's Architectural File, 32a/Be.



A FAVORITE IN SCHOOL LOCKERS is this single-tier standard louvre locker — the most popular in Republic's big line. Its height and roominess provide plenty of space for garments without wrinkling. And once locked, special door construction prevents prying, assures full-time protection for possessions. Available with choice of locking systems. Lockers can stand free or be recessed as above.



DAY LIGHT YOUR CLASSROOMS with handsome Truscon® Intermediate Classroom Windows. Designed for superior light and ventilation, these popular windows are ruggedly built from specially rolled sections to provide weathertight protection, attractive appearance. Truscon makes many types of Steel Windows—all currently being specified for school construction. Send coupon for more information.



MAKE FLOORS LIGHT AND FIRE-RESISTANT with Truscon "O-T"® Steel Joists. This low-cost-per-foot construction provides strength and safety—reduces time and labor required for erection. And it saves materials in supporting framework and foundations. Send coupon for literature describing complete line of Truscon Steel Building Products.

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WHICH LOCKER SYSTEM DO YOU PREFER?

Republic Steel Lockers offer three locking systems

Combination . . . padlock . . . or key operated . . . Republic's got 'em all—including Key-Control.

And you can have your choice of these protective systems in any one of many types and sizes of standard steel lockers for every conceivable storage requirement.

Through more than 65 years, Republic's Berger® Division, the world's biggest manufacturer of lockers, has completed more installations than any other maker. Here is experience you can always depend on when you want the best in lockers.

Berger offers school administrators and architects a complete planning and installation service, too. A service which supplies technical planning and engineering assistance, then assumes full responsibility for proper installation—right down to the final bolt. Get all the facts from your Berger representative, or send coupon for booklet giving details, specifications and prices.

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NOW . . . an accurate, dependable

ELECTRONIC TIME and SIGNAL SYSTEM

Architects everywhere recognize the great need for time signals to regulate heavy student traffic, especially in today's burdened secondary schools. They know, too, that dependability and accuracy are essential to the success of the system they choose.

System Suits Varied Needs

This new *electronic* system — *by Stromberg* — has many advantages, some of them unique. Here are a few: incorporates latest developments in electronic components; highly flexible program permits timing of several different signal schedules; manual signals, if needed, can be sounded instantly; automatic synchronization of all clocks every hour. Power interruption? The jeweled master clock movement, a superb example of technical craftsmanship, operates from its spring power reserve. Upon power resumption, program unit is immediately and accurately reset; 12-hour correction feature is *standard* — correction completed within one minute. Inherent throughout this new *electronic* system is the reliable, precision construction for which Stromberg has gained widespread recognition.

Ask, too, about **Fire Alarm Equipment**
Attendance Recorders
Time Stamps

For complete details about the most reliable time and signal equipment made, write

Stromberg

SUBSIDIARY OF GENERAL TIME CORPORATION

TIME CORPORATION
THOMASTON, CONNECTICUT

PRODUCT REPORTS

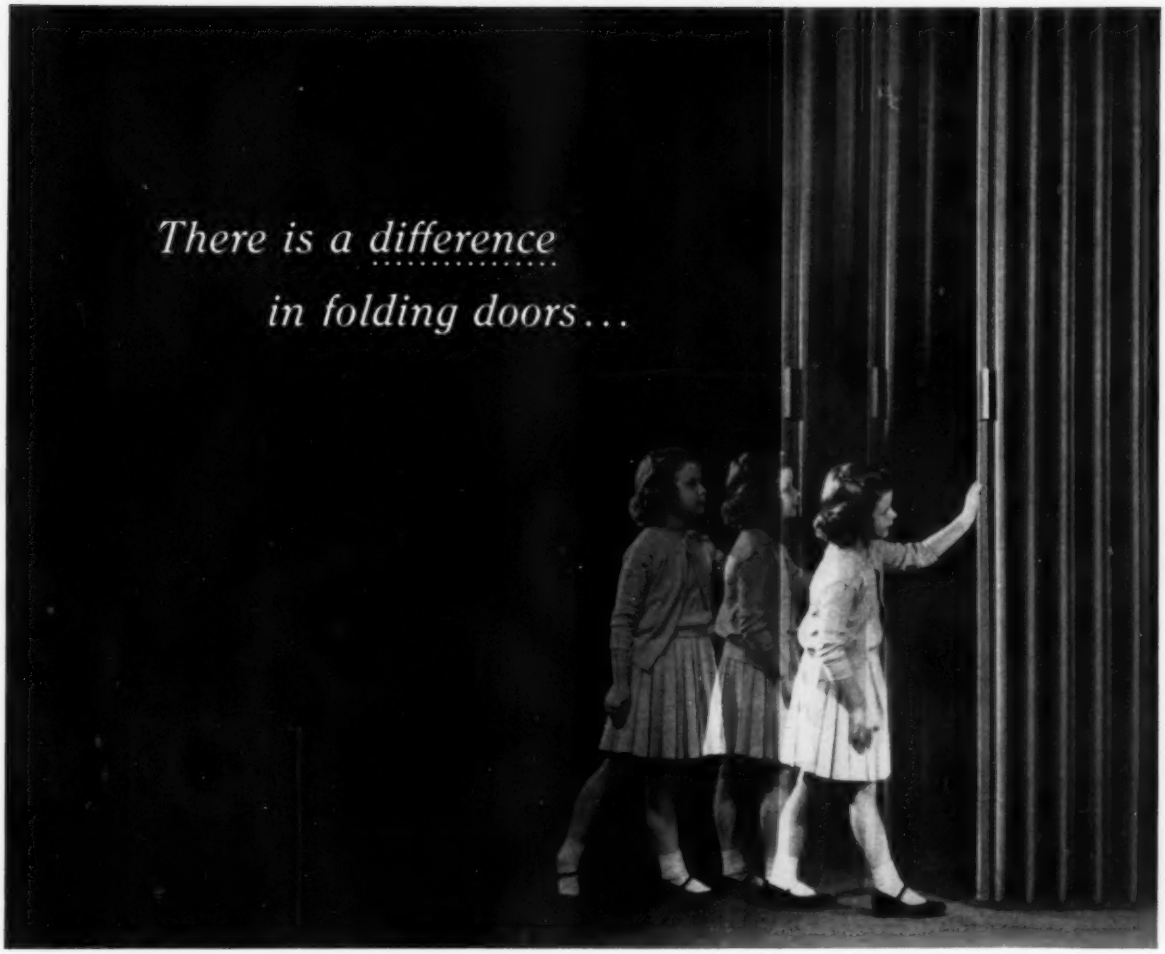
(Continued from page 330)

Caulking. *PD17 Caulking Compound* has a polymerized plastic base which makes it workable in all weather. Said to be non-staining and non-corrosive, it is recommended for use with all materials, including metal, slate, wood, masonry, brick and fiberboard, and is especially useful with decorative materials where stains are undesirable. *Armstrong Cork Co., Lancaster, Pa.*

Laundry Cabinet Tub works as a tub, a storage cabinet and a work surface. The *Laundry Maid* features an oversize, 22-gal, white Fiberglas tub that, it is said, won't chip, mar, scratch or crack; a cover plate which can be used as a work surface; and a cabinet within the white baked enamel case which can be used for storage. The unit measures 23 in. wide, 35½ in. high by 25 in. deep. *Culler Metal Products Co., Camden, N. J.*

Drawing Board Attachment that protects drawings and is said to reduce fatigue is a non-corrosive sheet steel tube which attaches to the front edge of any drawing board. The drawing is inserted into the *Spiroll* so that the bottom section is out of the way while the top section is worked on easily, with the draftsman either seated or standing. Sliding action from the Spiroll onto the drawing board is smooth, because there are no moving parts. *Spiroll Products Co., Room 16, 1 Concord Rd., South Sudbury, Mass.*

(Continued on page 338)



Foldoor's *easier operation* makes the difference!

Folding doors are first of all *functional*. And the easier they operate, *the better the function*. That's one reason why more and more architects, contractors and owners are specifying FOLDOOR—the easiest-to-operate fabric-covered door. Only FOLDOOR is constructed in continuous volutes—without large "pockets" to trap air and retard operation. In addition, FOLDOOR's rugged, simplified hinge-and-pantograph mechanism reduces metal-to-metal friction by an average 61%. But make no mistake: the same streamlined engineering which results in easier action also provides the rugged rigidity you demand on the job . . . as proved by the toughest in-use tests. Get the full facts from your nearby FOLDOOR Distributor—listed under "Doors" in the yellow pages.

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ONLY FOLDOOR IS DIFFERENT AND BETTER THESE SIX WAYS

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Please send free copy of new 1956 A.I.A. FOLDOOR Catalog

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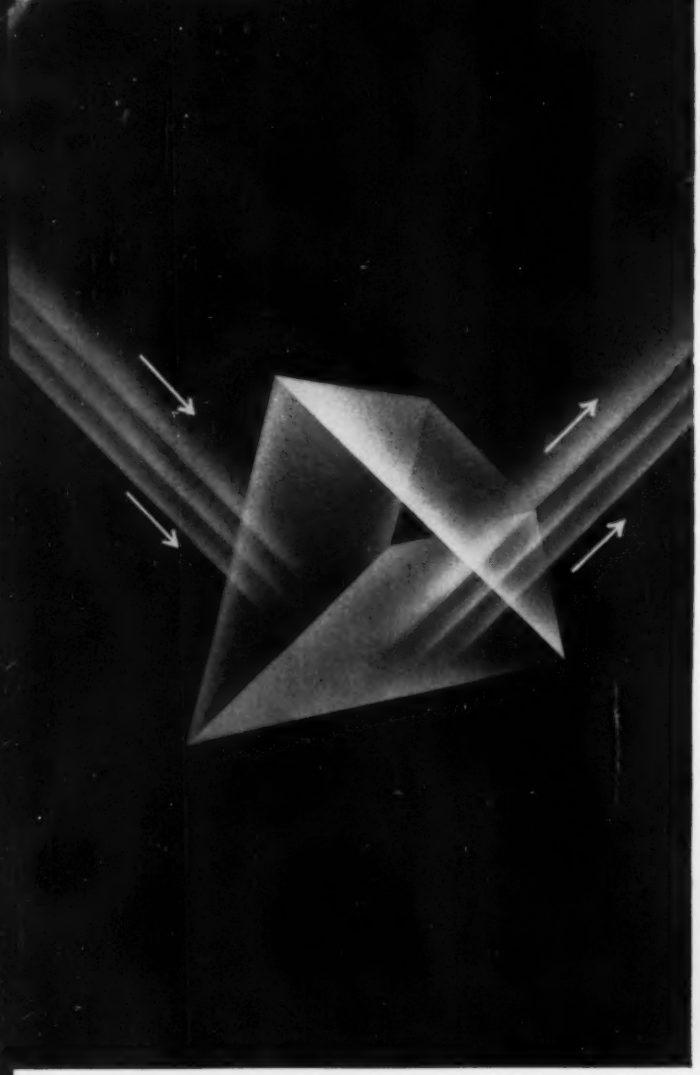
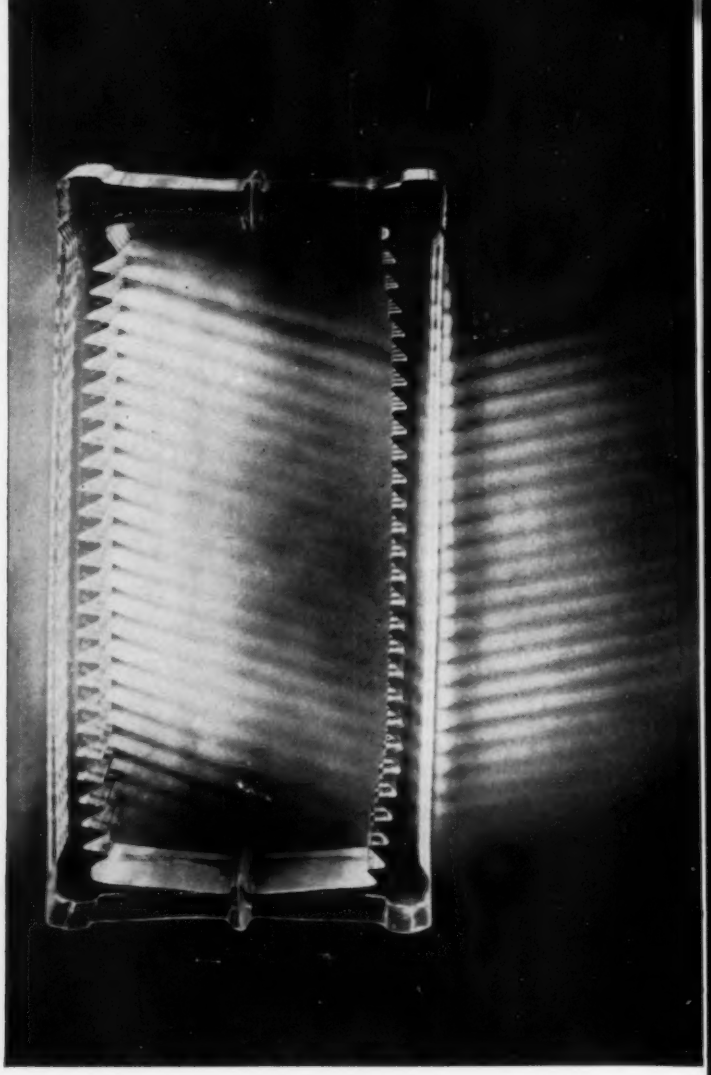
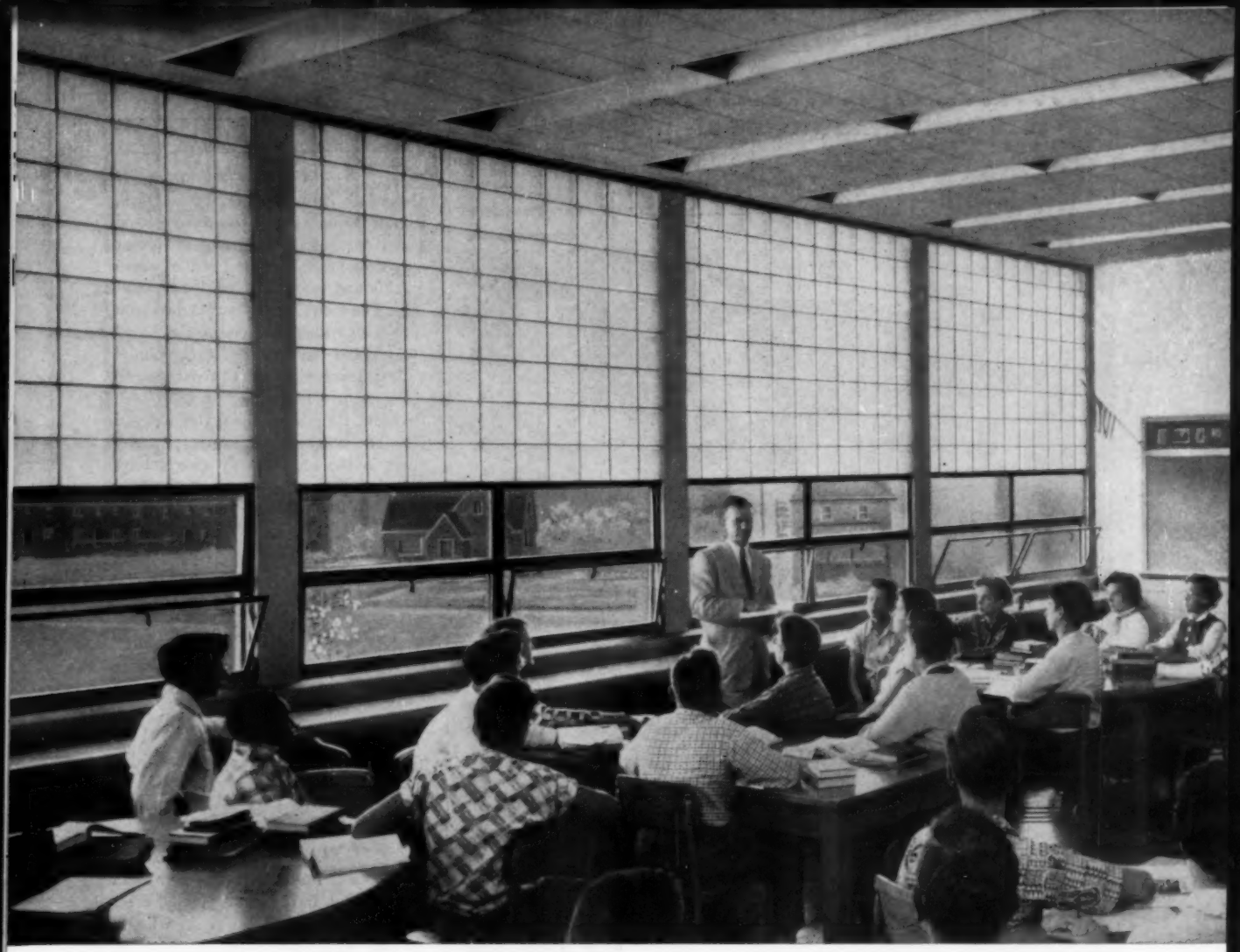




The principle of the optical prism . . .

applied to the design of Glass Blocks . . .

How PC Glass Blocks "discipline" daylight for classrooms is shown in the two illustrations directly above. The familiar light-bending characteristic of the optical prism is utilized in PC *light-directing* Glass Blocks. This is demonstrated in the cut-away section above. Light, entering from the left, is refracted by the internal prisms and directed upward to the ceiling. From here, the light is diffused evenly throughout the room. *Only prismatic Glass*



produces optically-controlled daylight that creates an optimum learning environment

Blocks provide this optically-controlled daylight. The result . . . *balanced* illumination that eliminates distracting glare and high-contrast shadows. Students see better—learn better.

Our brand new booklet on daylighting for schools gives complete information. Write Pittsburgh Corning Corporation, Department C-46, One Gateway Center, Pittsburgh 22, Pennsylvania. In Canada: 57 Bloor Street West, Toronto, Ontario.

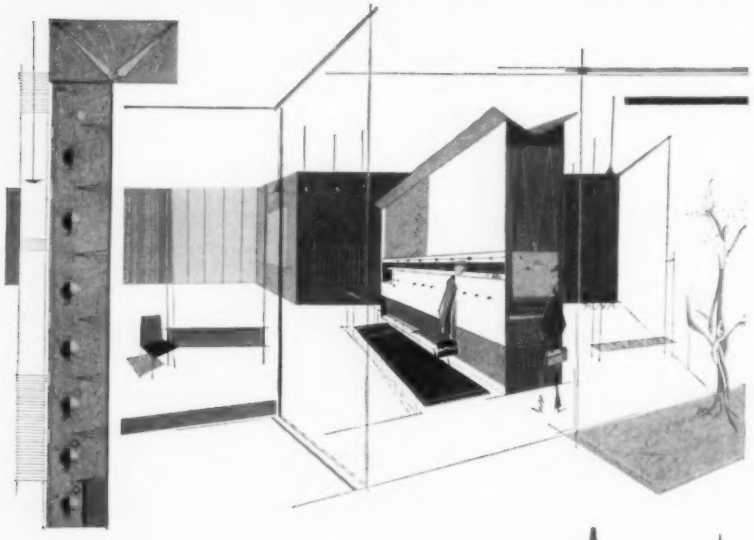
PC Glass Blocks

PITTSBURGH PC CORNING®

Also manufacturers of FOAMGLAS® insulation

PARTICIPATING IN SCHOOLROOM PROGRESS, U.S.A.

MARS outstanding design **SERIES**



chef-less restaurant

This concept of Sue Vanderbilt, Pratt industrial-design graduate now designing GM auto interiors, would assemble a whole meal and cook it by microwave in a few seconds. Customer would merely check picture menu, insert money, push buttons. By the time he reached the far end of the counter the meal would be waiting, piping hot. All components already exist.

Many designs that will make news tomorrow are still in the "bright idea" stage today. No one knows which will flower into reality. But it will be important in the future, as it is now, to use the best of tools when pencil and paper translate a dream into a project. And then, as now, there will be no finer tool than Mars—sketch to working drawing.

Mars has long been the standard of professionals. To the famous line of Mars-Technico push-button holders and leads, Mars-Lumograph pencils, and Tradition-Aquarell painting pencils, have recently been added these new products: the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman's" Pencil Sharpener with the adjustable point-length feature; and — last but not least — the Mars-Lumochrom, the new colored *drafting* pencil which offers revolutionary drafting advantages. The fact that it blueprints perfectly is just one of its many important features.

The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H. The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Mars-Lumochrom colored *drafting* pencil, 24 colors.

J.S. STAEDTLER, INC.
HACKENSACK, NEW JERSEY

at all good engineering and drawing material suppliers

PRODUCT REPORTS

(Continued from page 334)

Quarried Stone Veneer, ¾ in. thick, is more advantageous than conventional 4-in. stone, say its processors, because it conserves space, can be installed more quickly and results in considerable savings. The stone veneer is attached to a wall with rustproof metal anchors and splines, and the joints are tuck-pointed with magnesium mortar to give the same effect as a 4-in. wall. Although Crab Orchard, Bluestone, Ohio, Indiana and Colorado stone are available, Lannon stone is the most widely quarried by *Everglade Quarry Stone Co., Inc., 1720 Diversey Blvd., Chicago, Ill.*

Wall Rack for Plans. The new *Plan Hold* system has brackets pivoted within a wall plate which are equipped with special "slide-over" clips. The brackets swing back and forth so that reference is available to either side of plans. *Plan Hold, 5204 Chakemco St., South Gale, Calif.*

Electric Heat. *Glassheat* electric radiant heating panels are now available with deflector tops, as shown above, to prevent wall streaks. The units are constructed of specially tempered Hammertone finish glass fused with aluminum strips. Outside frames are finished in a neutral green and can be painted. The panels can be surface-mounted or recessed. *Continental Radiant Glass Heating Corp., 1 East 35th St., New York 16, N. Y.*

(Continued on page 342)

For the sewing class that's a growing class . . .
SINGER Combination Sewing and Cutting Table!

Accommodates More Students!

Designed with the help of leading home economics supervisors, the new two-in-one SINGER* Sewing Table accommodates *four* students at the same time.

It holds any combination of 2 full-sized SINGER* Machines and provides working space for two more students. With complete sewing needs right at hand, students never have to wait for work space!

Fits more machines into limited space!

Now there's no need to waste space with *separate* machine cabinets and cutting tables. Machines lower into the SINGER Table . . . removable panels slip into place . . . and presto!

There's a smooth, continuous surface for pattern pinning and cutting! Students needn't shift from machines to cutting tables. Noise and confusion are eliminated . . . teaching is more *efficient*.

Has all these convenience features!

- Two handy drawers—plus two deep openings to accommodate all standard tote trays.
- Drop leaf for extra space. (Second leaf available for other end if desired.)
- Built-in knee levers.
- All metal parts grounded.
- Safety switch—cuts off power automatically when machines are lowered into table.
- Dustproof shields—completely enclose machines when not in use.
- Tamper-proof locks on panels.
- Table available in beautiful blond or dark wood.
- Durable "Formica" top, choice of blond, dark or different colors.
- Size—60" x 42" x 30" with 18" drop leaf.

Special school discount

with any full-sized SINGER heads you prefer —Straight-Needle, Slant-Needle* or Swing-Needle.*

For free folder

giving specifications and suggested classroom layouts, just mail this coupon.

SINGER SEWING MACHINE CO.
Educational Dept., 149 Broadway, N.Y. 6, N.Y.

Please send folder giving details about Combination Sewing and Cutting Table, and showing suggested classroom layouts.

Name_____

Position_____

School_____ County_____

Street_____

City_____ Zone____ State_____

SINGER SEWING CENTERS

THERE'S ONE NEAR YOUR SCHOOL

*A Trade-Mark of THE SINGER MANUFACTURING COMPANY.

CRA

New! Another exciting "idea" bathroom– the Crane Duet

It's featured in a big, full-color, 2-page advertisement in LIFE, March 26

Here's a bathroom idea your clients will like because nine out of ten people *want* bathrooms that are different. They're hungry for new ideas—ideas such as you see in this combination bath and dressing room.

Some people will want the Duet bath just as it is shown here. Others will like parts of it. In either case, they will appreciate your help in planning new and exciting Crane rooms for them.

Crane design, colors and quality are available in a wide range of prices to meet every purse. Your clients know when you specify Crane, it's a sure sign that you're planning soundly throughout the house.

CRANE CO.

General Offices: 836 South Michigan Avenue, Chicago 5, Illinois

VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING

First time ever!

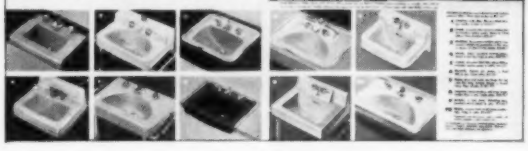
For the first time in the history of LIFE, a plumbing manufacturer shows fixtures in a full range of colors. See Crane's big 2-page magazine showcase in LIFE, March 26.

NE

THE
PREFERRED
PLUMBING

CRANE

The pacesetter in design
sets the pace in color, too



The Duet room by CRANE—A combination bath and dressing room. Slide out the center partition and you have a separate dressing room. Two handsome Criterion lavatories set in sweeping marbleized counter-top. Glass enclosed cast iron Neuvogue tub with shower. Criterion closet with correct posture design. Heating is Crane radiant baseboard.

WINDOW WASHING
-an inside job with Fleetlite WINDOWS

- **Available in Double, Double Hung and Double Horizontal Sliding — All Sash Double for the ultimate in weather protection.**
- **Matching Picture Windows and combinations of above for Ribbon Fenestration.**

Fleetlite Windows have all the features needed in modern construction including complete removal from the inside of the building for simple easy low cost cleaning.

Fleetlite Windows are made of the finest extruded aluminum (63ST-5). Prime sash, storm sash and screens (if required) are integral parts of the window assembly.

Stops Wind, Dust, Noise, Heat, Cold — yet opens instantly — easily. Mohair weather stripping and snug interlocking double sash seal out dirt. 1½" air space between inside and outside sash insulates for economical heating, air conditioning and sound reduction.

Let us send complete information on this modern window that requires no painting or puttying, ever. Clip and mail the coupon below.

Please send me
- ☐ Detailed Literature
- ☐ List of Standard Sizes
- ☐ Typical Installation Data
- ☐ Location of nearby Fleetlite installation
- ☐ Have Fleetlite representative call

Name.....
Address.....
City..... State.....

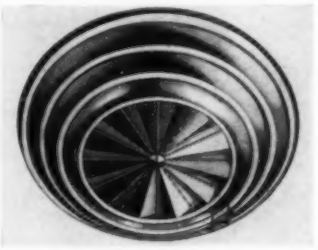
Fleetlite
AMERICA'S finest WINDOW

FLEET OF AMERICA, INC., 2029 Walden Avenue, Buffalo 25, N. Y.

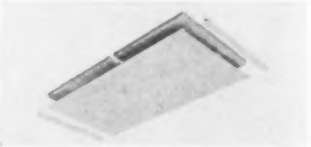
PRODUCT REPORTS

(Continued from page 338)

Metal Laminates. *Col-O-Vin* metal laminates are composed of semi-rigid vinyl sheeting bonded to steel or other non-ferrous metals, thus eliminating the need for finishing and producing a decorative covering that won't discolor when machined. *Col-O-Vin* has an added advantage of inherent resistance to abrasions and rough usage which makes it virtually indestructible. Colors now available for lamination include flame, green olive, mustard, salt and pepper, saddle, russet brown, mocha, slate and blue. *Columbus Coated Fabrics Corp., Columbus, Ohio.*



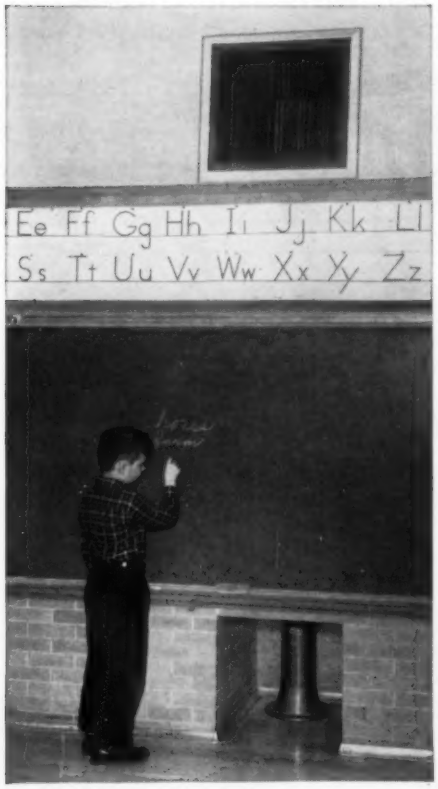
Ceiling Diffuser features completely adjustable louvers which make possible a full variation of air patterns from horizontal to vertical. Model P *Venturi-Flo*, which can be adjusted from the floor, is capable of driving hot air to the floor from mounting heights up to 50 ft, even with temperature differentials as high as 40 F. Because such long vertical throws are possible, the diffuser can be used in large manufacturing areas, gymnasiums, field houses, auditoriums, etc. *Barber-Colman Co., Rockford, Ill.*



Acoustical Panels, called *Gold Bond Panelcoustic*, combine sound-absorbing mineral wool pads and large 2- by 4-ft protective panels of perforated metal. The 2- by 2-ft sound-absorbing pads are available in three thicknesses, giving noise reduction coefficients in the .60 to .90 range. The baked enamel surface of the 8-ft-square panels can be either brush- or spray-painted without impairing acoustical efficiency. The panels can be lifted out of T runners easily for access to utilities above the ceiling. *National Gypsum Co., Buffalo 2, N.Y.*

(Continued on page 346)

How new heating and ventilating system cuts schoolroom construction costs . . .



Dunham VARI-AIR Unit, concealed in mixing flue behind blackboard, mixes fresh and recirculated air—silently diffuses it to classroom through overhead grille.

Dunham VARI-AIR—designed to help the "hard-pressed" budget . . . and save valuable floor space

School construction costs can't go anywhere but down when Dunham VARI-AIR heats and ventilates classrooms. This new system satisfies all health and comfort standards . . . does it at a cost that meets with full approval of any school board member.

In addition to healthful, silent heating and ventilating, VARI-AIR puts school air conditioning within easy financial reach of construction budgets. This optional use of VARI-AIR can be economically provided for when the system is installed.

Offers Numerous Advantages

Lower Costs: Dunham VARI-AIR eliminates need for in-the-room cabinet ventilators . . . provides greater savings in classroom heating construction costs. Total absence of complex controls saves both first and maintenance costs.

Minimum Temperature Variations: Dunham's centralized temperature control system holds room temperatures within prescribed limits by automatically compensating for weather change and heat loss.

Space Saver: No floor space in classroom is given over to either heating or ventilating with a Dunham VARI-AIR system.

How VARI-AIR Operates

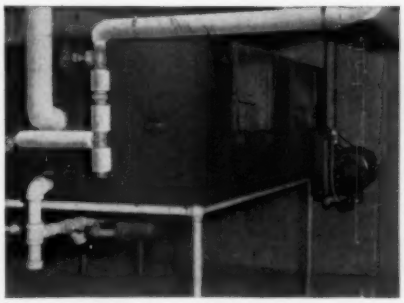
Only three primary parts to the system. VARI-AIR Units are concealed in wall spaces, mix fresh and recirculated air and diffuse it into classrooms.

Heating and Ventilating Unit—generally one to the entire system—pulls in fresh outside air, tempers, filters and discharges it through a tunnel or ceiling plenum to the VARI-AIR Unit.

Radiation—Dunham THERMO VECTOR® "along-the-wall" radiation saves floor space and provides all necessary heat whether used with steam or hot water.

For complete information, contact any Dunham Representative or mail the coupon.

Dunham Finned-Pipe Radiation runs along outside walls, under windows to eliminate chilling downdrafts, save premium classroom floor space.



Dunham Heating and Ventilating Unit pulls in outside fresh air and tempers, filters and discharges it through a tunnel or ceiling plenum to VARI-AIR Units.

Dunham VARI-VAC® Temperature Controls provide centralized operating station for *all* system settings and readings. This electronic "brain" helps system save up to 40% on fuel.

DUNHAM **HEATING & COOLING EQUIPMENT**

RADIATION • CONTROLS • UNIT HEATERS • PUMPS • SPECIALTIES

C. A. DUNHAM COMPANY • CHICAGO • TORONTO • LONDON

C. A. DUNHAM COMPANY
Dept. AR-4, 400 W. Madison Street
Chicago 6, Illinois
Please send VARI-AIR literature.

Name_____

Company_____

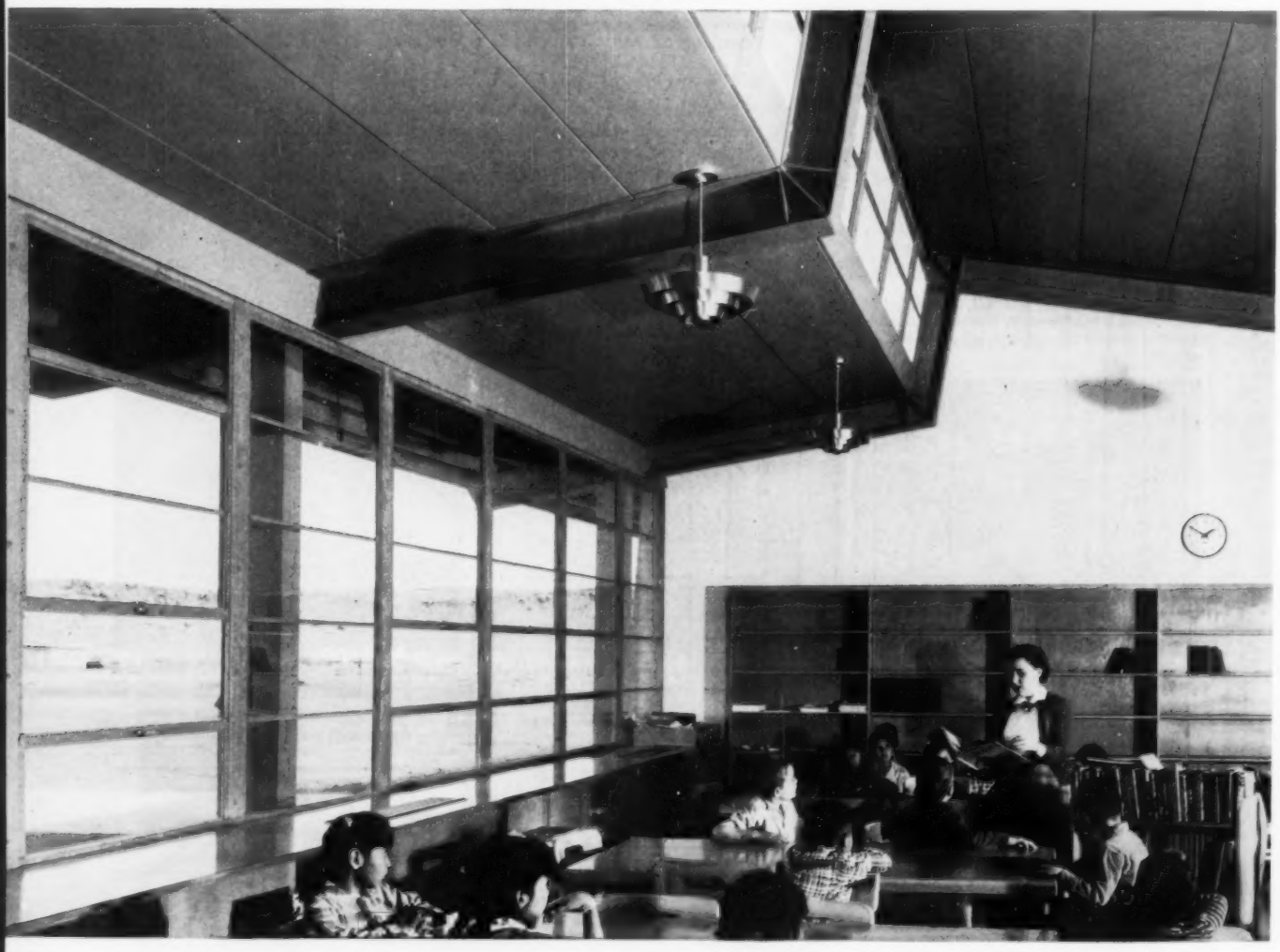
Address_____

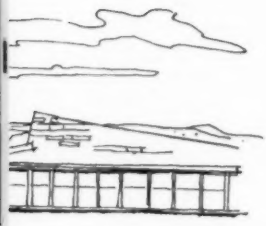
City_____ Zone____ State_____

Fenestra
SCHOOL DESIGN NEWS

General Contractor: M. M. Sundt Construction Co., Tucson, Arizona.
Panel Erector: Chapman-Dyer Co., Tucson, Arizona.

There's built-in quiet in Window Rock classrooms with Fenestra Acoustical Building Panels. A high-efficiency acoustical material is enclosed in the cellular panel and the perforated flat-plate area absorbs the sound. Completely prefabricated, these long-span panels are erected quickly and at low cost. A coat of paint finishes the flush ceiling, and soap and water keep it like new. Repainting will not affect acoustical efficiency and there is no hanging or "stuck on" material to be damaged or replaced. An ideal ceiling for gymnasium and corridor areas, too. Ask your Fenestra representative for complete information.





Isolated location

and severe

climate created

unusual design problems for...

WINDOW ROCK

PUBLIC SCHOOL

Architect E. L. Varney, Phoenix, Arizona, specified Fenestra Metal Building Panels to simplify design, construction and maintenance.

Covered walkways are economical with Fenestra "E" Roof Deck for spans up to 20 feet. The 12" width co-ordinates with Fenestra Building Panels and modular construction. Simple design eliminates complicated detailing and engineering and saves structural steel. The exposed undersurface forms an attractive beamed finish ceiling.

In the center of a Navajo Indian Reservation, 1,000 miles in diameter, Window Rock is surrounded by some of North America's most desolate, yet starkly beautiful country. The site gets its name from a large rock with a natural hole in it created by thousands of years of wind erosion. Burned by the sun all summer and very cold in the winter, Window Rock created unusual problems of design and logistics for the construction of a million-dollar elementary and high school.

The materials chosen had to provide simple construction and require minimum maintenance. That's why Architect Varney specified Fenestra* long-span cellular steel building panels for the roof structure of the various units of the school and Fenestra "E" Roof Deck for the covered walkways connecting the buildings. (Photo above.)

Combining light weight with great strength, the Fenestra Building Panels were easy to transport and erect and provide for spans up to 30 feet. The 24-inch width of each panel simplified design details and modular co-ordination with other materials.

Interior areas feature Fenestra Acoustical Building Panels which provide the structural roof plus a built-in metal pan acoustical ceiling erected as one unit by one trade. (See photo left.)

While the school you are now planning may not have the location and climate problems of Window Rock, Fenestra Building Panels can save you both time and money on the structure. Easy maintenance keeps schools attractive, year after year, at minimum cost.

Ask your local Fenestra representative for complete information—he's listed in the Yellow Pages—or mail the coupon below.

*Trade-Mark

Fenestra Metal Building Panels

Your Single Source of Supply for
DOORS • WINDOWS • BUILDING PANELS

Fenestra AR-2252 East Grand Boulevard
Detroit 11, Michigan

Please send me information on Fenestra Building Panels for Schools.

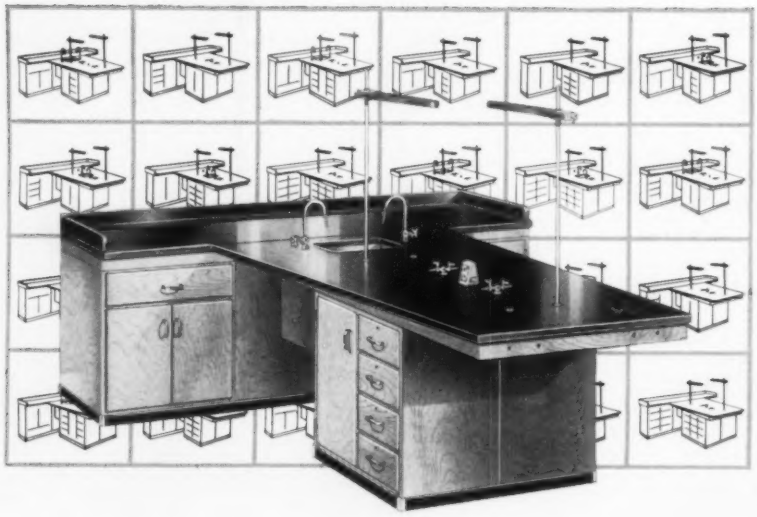
NAME_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

Hamilton Activity-Centered science tables . . . with 90 work-and-storage combinations . . . solve tomorrow's classroom problems, today!



Before today's freshmen are seniors, classroom requirements will be critical. You can start to meet this problem now with Hamilton Activity-Centered tables, which permit science rooms to be used *every period* of *every day*, for laboratory, academic or home room activities.

These new Hamilton units offer so many advantages—largest available work surface . . . up to 40 locked drawers . . . unique, tapered "traffic-flow" design . . . low-cost roughing-in option . . . Northern Hard Maple construction in 6 distinctive finishes . . . 90 different work-and-storage combinations!

There's a lot more we'd like you to know about Hamilton Activity-Centered science tables—please write today.

Hamilton

LABORATORY EQUIPMENT

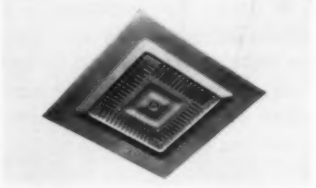
HAMILTON MANUFACTURING COMPANY TWO RIVERS, WISCONSIN

PRODUCT REPORTS

(Continued from page 342)

Hinges. A slide rule selector for use in specifying hinges folds flat so that it can be carried in a pocket or briefcase and is enclosed in a polyethylene envelope. By means of charts and slides the architect can select the proper hinge for any type door. *The Stanley Works, New Britain, Conn.*

Beverage Center. Newest model in the *Constellation* line of *Oasis Hot 'n Cold* water coolers is the bottle type shown above with a refrigerated compartment. In addition to furnishing hot water for instant beverages and cool water for drinking, this model (the BR-HC) has a refrigerated compartment for storage of bottled drinks, packed lunches or pharmaceuticals. It also keeps two trays of ice cubes. *Ebco Mfg. Co., Columbus 13, Ohio.*



Ceiling Air Diffuser. A modification of the *Kno-Draft* diffuser, fabricated of heavy-gauge steel, is recommended for institutions and sanatoriums where tampering may be encountered. Mounted flush against the ceiling, with air discharge through slots which fit firmly against the outer plate, it is designed to discourage attempts at damage. Capacity and performance are the same as for standard models. *Connor Engineering Corp., Danbury, Conn.*

(Continued on page 350)

COOL COMFORT FOR EVERY HOME *at lowest cost*

You can now provide a modern and efficient cooling system for any type or size home without a burden of cost to you or the buyer. An easy-to-install Hunter Package Attic Fan will fill an entire home with refreshingly cool air. It quietly pulls in fresh, outdoor breezes as it forces out hot, sticky, inside air…causing room temperatures to quickly drop from 10 to 20°.

Hunter gives you all five of these features:

Easiest to install of all attic fans, the Hunter requires no replastering, repainting, suction box or other "extras" for installation or maintenance. Compact unit rests on attic floor, needs only 18″ to 26″ attic clearance. A Hunter is easily installed in any home, old or new.

1. Adaptability to any home

Five sizes available, with certified ratings from 5000 to 16,000 CFM.

2. Ease of installation

The Hunter unit is complete, including automatic ceiling shutter.

3. Low initial cost

A Hunter gives a home cool comfort at lowest possible cost.

4. Dependable service

A Hunter is unexcelled for trouble-free operation year after year.

5. Guaranteed performance

The fan unit is completely guaranteed 5 years; motor and shutter one year.

HUNTER

Hunter SINCE 1886 *Package Attic Fans*

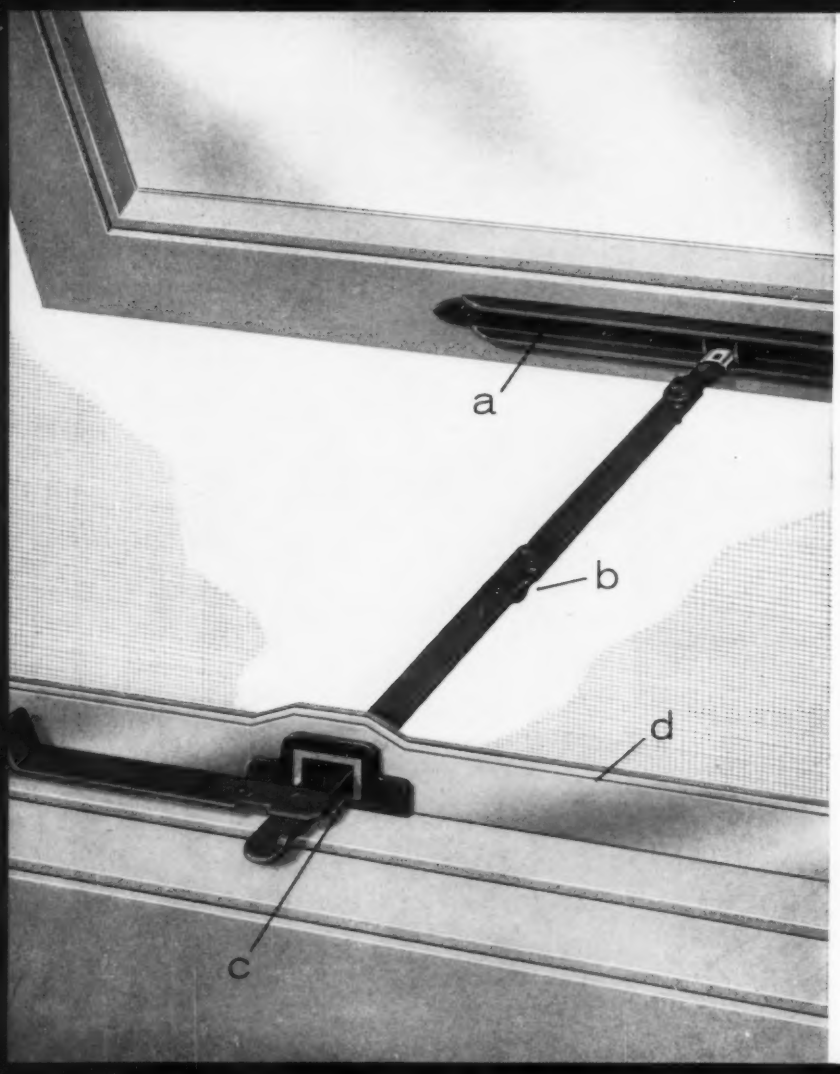
HUNTER FAN AND VENTILATING COMPANY
P.O. Box 2858-F, Memphis 2, Tenn.

SEE OUR CATALOG IN SWEET'S

Mail for copy of "COOL EVERY ROOM WITH A HUNTER ATTIC FAN"
Hunter Fan and Ventilating Company
P.O. Box 2858-F, Memphis 2, Tenn.

Name_____
Address_____
City_____
State_____

2 new improvements with versatile Andersen



New Bar-Lock Operator*

Here's a bar-type operator that combines tight sash closure, exceptional strength, and operating convenience at low cost. Secret of new operator is exclusive Deflection Bar attached to bottom rail of sash, providing a favorable bow that causes corners to close first. Operator arm is hinged permitting three open sash positions without extending into room.

a. deflection bar on sash bottom rail
b. spring steel operator arm
c. zinc die cast housing on frame
d. removable screen

Design window beauty in infinite variety with Flexivents

Three-high group of fixed and awning Andersen Flexivents in Pontiac, Michigan residence. James Camp, designer.

WINDOWALL of Andersen Flexivents and Flexiviews in home near Detroit. Stanley C. Reese, architect; Raymond J. Smith, Jr., designer.

Doorway flanked by stacks of Andersen Flexivents in hopper position. Bimel Kehm, designer. New Canaan, Conn.

you can now specify Flexivent® windows

New Seal-Trim* (exterior)

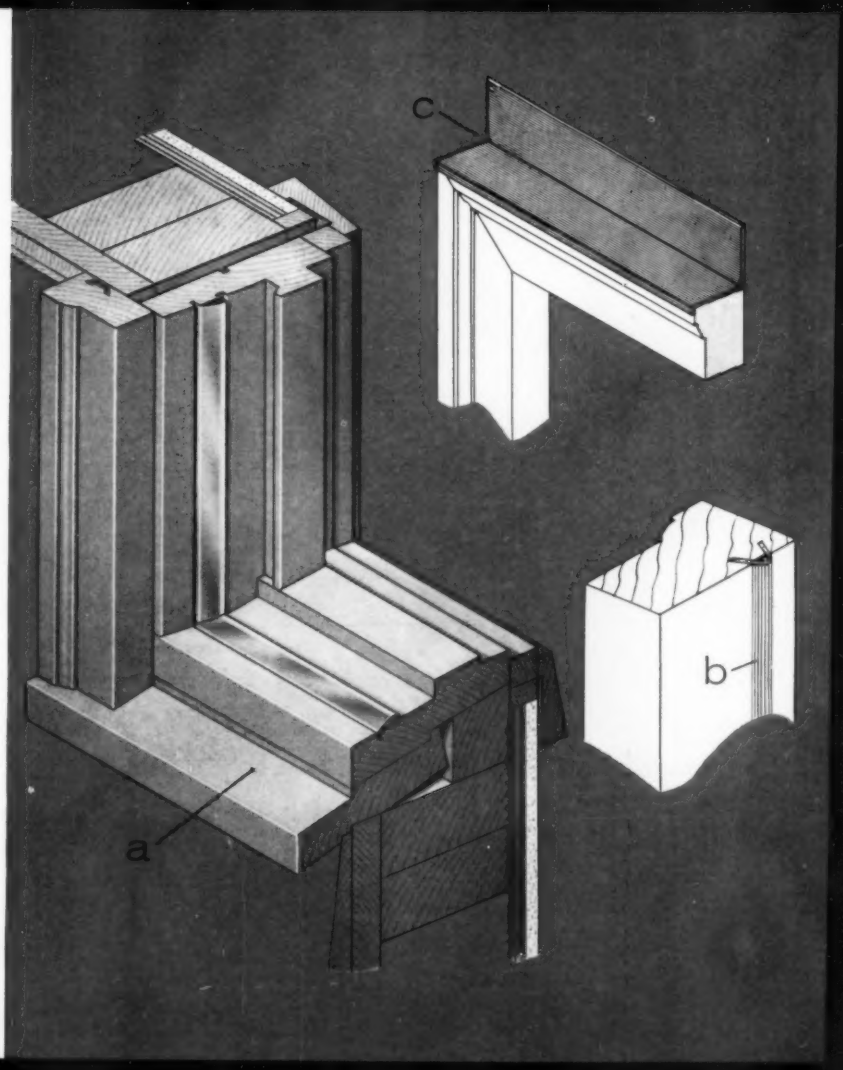
Andersen Seal-Trim is a complete exterior trim package with casing, subsill, aluminum flashing and a vinyl sealing gasket. All parts are pre-cut and pre-fitted at the factory to fit most standard Flexivent group installations, and to provide an easy-to-install, highly weathertight joining with any type of wall. Wood parts are treated with toxic, water repellent preservative.

a. specially milled and horned subsill

b. vinyl sealing gasket in casing

c. aluminum flashing at head

**Patent Pending*



Andersen Windowalls

TRADEMARK OF ANDERSEN CORPORATION

Complete WOOD *window units* ANDERSEN CORPORATION • BAYPORT • MINNESOTA

For Lifetime Wear

...and colorful beauty, too!

Amtico
PERMALIFE
VINYL FLOORING

All-vinyl . . . with beautiful colors going through-and-through, Amtico Vinyl Flooring is the most complete line and offers unlimited design possibilities . . . takes hardest wear for years.

America's most luxurious flooring, Amtico Rubber Flooring is the quality leader that gives your customers lifetime economy, rich beauty, cushioned comfort and fire-resistance.

Amtico
RUBBER FLOORING

Also makers of Amtico Plastex Rubber Flooring

World's Largest Producer of Rubber and Vinyl Floorings

AMERICAN BILTRITE
RUBBER COMPANY
TRENTON 2, N. J.

New York Office: 461 Fourth Avenue
In Canada—American Biltrite Rubber Co. (Canada) Ltd., Sherbrooke, Quebec

See SWEET'S FILE, Architectural, for specifications and installation data, or mail coupon below:

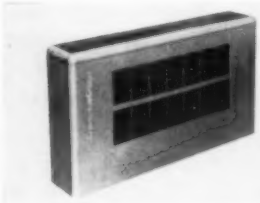
AMTICO, Dept. AR-Z, Trenton 2, N. J.
Gentlemen:
Please send me Free complete set of Samples and detailed information about Amtico Floorings.

Name.....
Firm.....
Address.....
City..... Zone..... State.....
(Please attach coupon to your business card or letterhead)

PRODUCT REPORTS

(Continued from page 346)

Vapor Barrier Film. *Ger-Pak* is a new extruded polyethylene moisture vapor barrier film for use under concrete slabs, in crawl spaces around the exterior of foundation walls, over sub-flooring and on the warm side of walls as a dust barrier. According to reports, it will not crack, chip or peel, is highly resistant to most known chemicals and will not embrittle with age. It is available in widths up to 20 ft and wound on rolls of 100 lin ft or more, in thicknesses of 0.002, 0.004 and 0.006 in. and heavier. Two colors, black and transparent, are produced. *Gering Products, Inc., Kenilworth, N. J.*



Room Air Conditioner, designed for perimeter zone cooling and heating in an induction-type, high-pressure air conditioning system, is available in both a vertical concealed model, for an enclosure with only 7 in. of floor space depth, and a vertical cabinet, requiring only 1 in. more floor space. All units are just 22¾ in. high. Eight basic capacity arrangements are possible, sized for 30 to 120 cfm of primary air, with either standard or oversize nozzles to eject the primary air and induce secondary air. *The Trane Co., La Crosse, Wis.*

Magnesia Wall Cement. *Fire Ban,* said to be three times as strong as portland cement, can be brushed, troweled or sprayed directly onto cellulose fiberboard or other common insulating materials, with no need for lathing, to provide a wall which prevents fire from spreading and destroying combustibles underneath and which requires no painting. Pigments can be mixed in the batch to provide color. *E. H. O'Neill Floors Co., 2525 So. 50th Ave., Cicero 50, Ill.*

Home Arts Equipment for Schools includes all types of cabinets, storage units, sinks, tote trays and other accessories in bonderized steel. Six colors are available in addition to white. A kitchen planning service is also offered by *Geneva Modern Kitchens, Geneva, Ill.*

EASY TO SPECIFY... EASY TO STOCK...

NEO-RAY "KLEEN-VU" KVT RECESSED TROFFERS

for all types of ceilings

VERSATILE

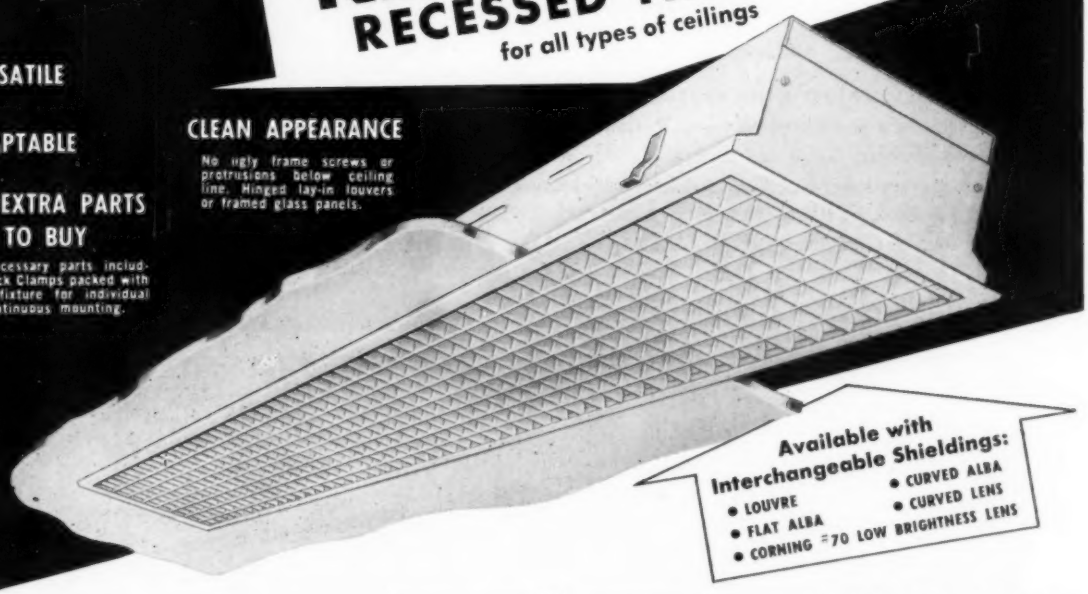
ADAPTABLE

NO EXTRA PARTS TO BUY

All necessary parts including Jack Clamps packed with each fixture for individual or continuous mounting.

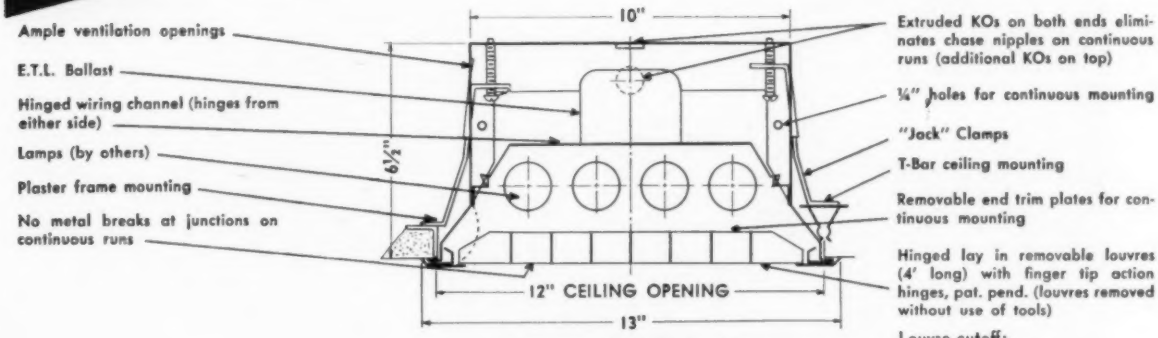
CLEAN APPEARANCE

No ugly frame screws or protrusions below ceiling line. Hinged lay-in louvers or framed glass panels.

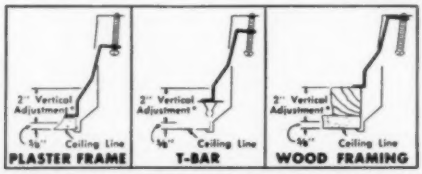


Available with Interchangeable Shieldings:

- LOUVRE
- FLAT ALBA
- CORNING #70 LOW BRIGHTNESS LENS
- CURVED ALBA
- CURVED LENS


Ample ventilation openings
E.T.L. Ballast
Hinged wiring channel (hinges from either side)
Lamps (by others)
Plaster frame mounting
No metal breaks at junctions on continuous runs
10"
6½"
12" CEILING OPENING
13"
Extruded KOs on both ends eliminates chase nipples on continuous runs (additional KOs on top)
¼" holes for continuous mounting
"Jack" Clamps
T-Bar ceiling mounting
Removable end trim plates for continuous mounting
Hinged lay in removable louvres (4' long) with finger tip action hinges, pat. pend. (louvres removed without use of tools)
Louvre cutoff:
Lengthwise 30°
Crosswise 40°

Illustrated KVTL Series

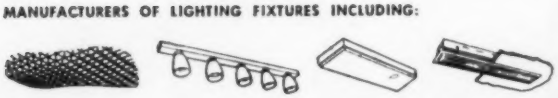


Neo-Ray Adjustable "Jack" Clamps (Pat. Pend.)
Furnished At No Added Cost. Fixture Is Held Firm And Snug Against The Ceiling. Note: Special "JACK" Clamps Available For Simplex And Other Types Of Ceilings.

Send for
New Commercial Lighting Fixture
Catalog No. 543

See our catalog in Sweet's
Architectural File for 1956 sec. 31a
NE

MANUFACTURERS OF LIGHTING FIXTURES INCLUDING:



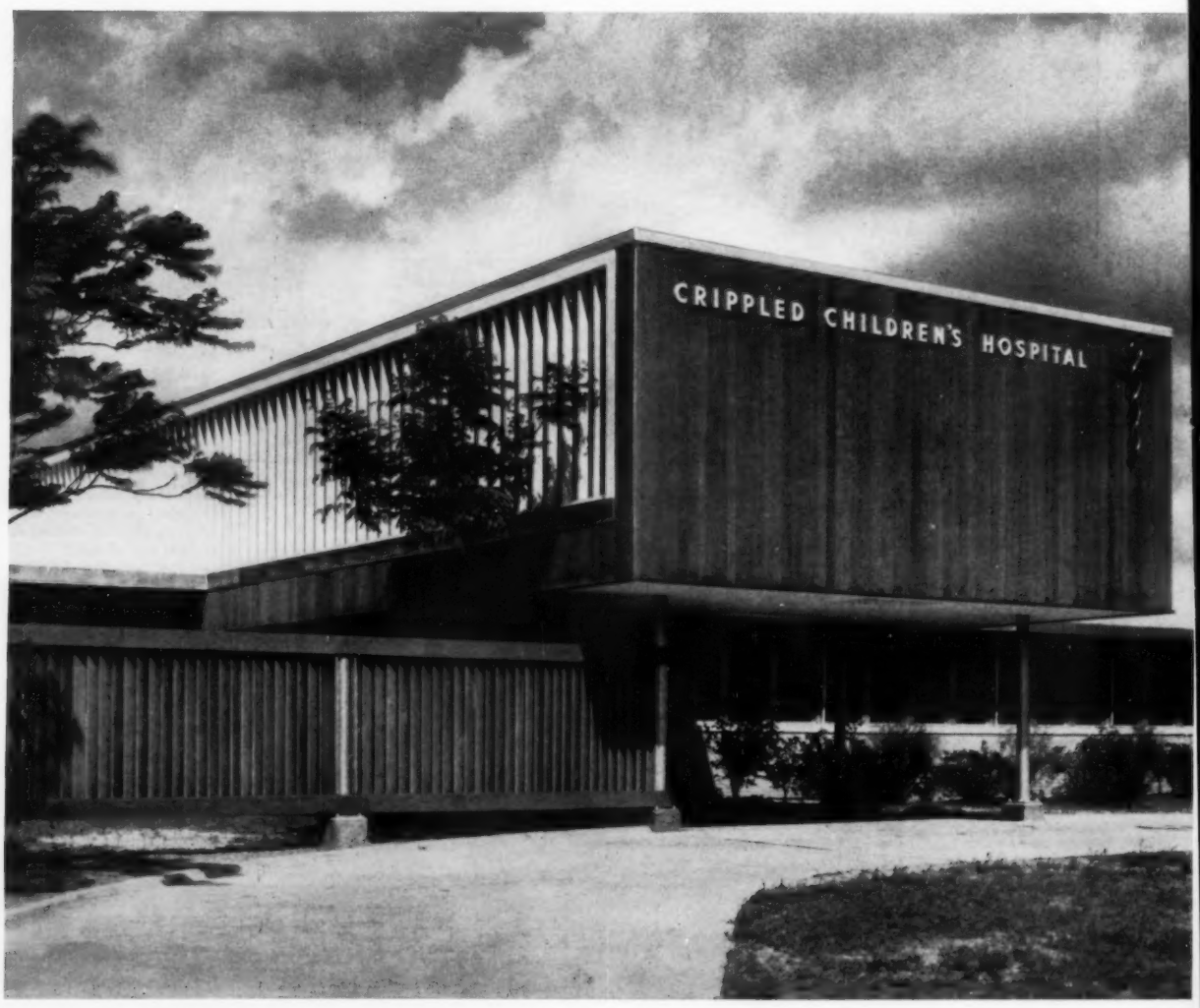
Louvred Ceilings • Roto-Strip • Luminette • Kleen-VU KVT Troffers

NEO-RAY PRODUCTS, Inc.
315 East 22nd St. • New York 10, N. Y.

Crippled Children's Hospital in New Orleans

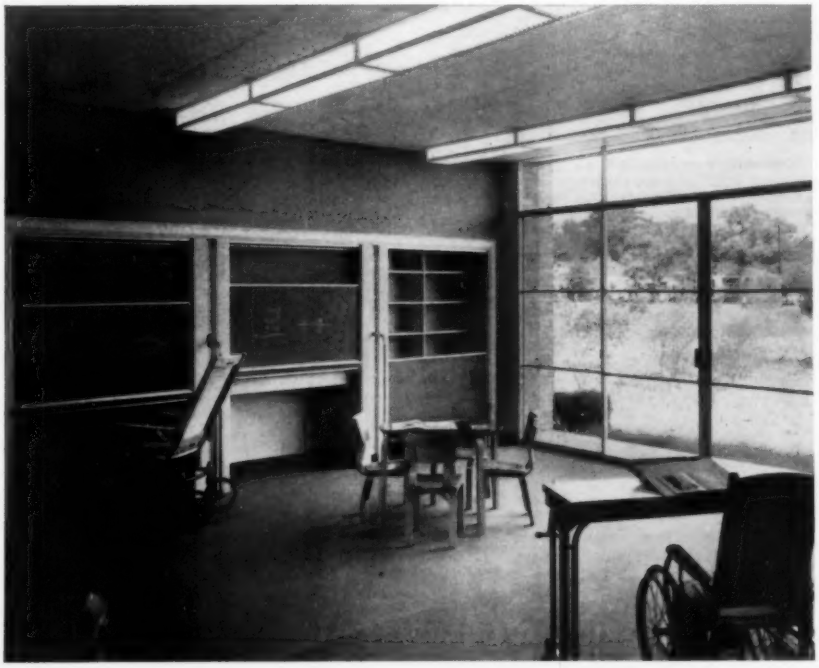
uses Pittsburgh Glass for functional and psychological purposes

THIS HOSPITAL IS THE FIRST IN NEW ORLEANS, LOUISIANA, devoted exclusively to the rehabilitation of crippled children. Marked by advanced planning, design and construction, this modern institution provides every conceivable feature for the safety, comfort, and quickest possible recovery of the patients. Pittsburgh's Solex® solar-heat-absorbing, sun-glare-reducing glass helps to keep interiors cooler and more pleasant, as does Pittsburgh's Twindow® – the windowpane with insulation built in. Other Pittsburgh products installed here include Herculite® and Tubelite® doors, Pittcomatic® automatic door openers, Pittco® De Luxe metal, and copper back mirrors. Architects: Ricciuti Associates, New Orleans, Louisiana.



HERCULITE DOORS, equipped with mat-operated Pittcomatic hinges —"the nation's finest automatic door openers"—were selected for the main entrance. These doors make possible extreme ease of operation, with maximum safety—features of the greatest importance to the crippled child.

IN THIS COLORFUL CLASSROOM, a wall of Pittsburgh Polished Plate Glass admits the outside view to produce a more cheerful and brighter interior. Experts agree that "walls of glass" offer many psychological benefits to the children. The installation of sliding glass walls in many of the rooms provides easy access to the attractive outdoor patios, where the children may dine or play in complete privacy.



Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products...Sections 7a, 13e, 16a, 16d, 21.

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PITTSBURGH PLATE GLASS COMPANY

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NORTHWESTERN University

EVANSTON CAMPUS . . . CHICAGO CAMPUS

By using the Electro Silv-A-King "SKYLOUVER" in Chicago and the "20/20" fixture in their Evanston school, they were able to reduce maintenance costs and achieve an attractive uniformity in appearance regardless of location or mounting arrangement . . . and, at the same time, provide the correct level of comfortable, glare-free illumination for the various seeing tasks in every type of room.

LECTURE ROOM—EVANSTON Six rows of 4-ft. 2 light "20/20" units, single stem mounted on 4-ft. centers maintain 90 foot candles. Louvers are spaced equi-distant for more attractive appearance.

LIBRARY—DOWNTOWN This walnut paneled library seats 300 people. Ninety-six, thin 4-lamp "SKYLOUVER" units, with translucent styrene louvers, deliver 60 footcandles of "just like daylight" illumination.

Electro-Silv-A-King fixtures are also used in offices, laboratories, television studios, corridors, etc., in various buildings on both the Evanston and Chicago campuses.

Architects: Holabird, Root & Burgee, Chicago • Distributors: Revere Electric Supply, Chicago • Englewood Electrical Supply Co., Chicago • Contractors: Electrical Contractors, Chicago; Hubble Electric Co., Evanston.

Electro Silv-A-King... for your school

Because the Electro-Silv-A-King line offers an unprecedented variety of fine quality fixtures now being used in many of the nation's outstanding schools. There is one that will meet your every requirement for performance, appearance and value.

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Electro Silv-A-King Corporation

1535 S. Paulina St., Chicago 8, Illinois
Spruce & Water Sts., Reading, Pennsylvania

DESIGNERS AND MANUFACTURERS OF THE FINEST IN LIGHTING

OFFICE LITERATURE

(Continued from page 268)

Paint. "A Guide to Better Paint Specifications" is the title of a 12-page manual covering the most frequently used paint products, their functions and application techniques (AIA File 25). *Martin-Senour Paints, 2520 So. Quarry St., Chicago 8, Ill.**

Aluminum. Four new booklets are available on architectural aluminum and industrial building products. "Wall Systems of Alcoa Aluminum," "Aluminum in Architecture," "Aluminum Products for Industrial Construction," "Aluminum Roofing and Siding Products." *Aluminum Company of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa.**

Timber Fastenings is the subject of *Architect's Bulletin 7*, 16 pp (AIA File 19-A-1). Another booklet, entitled "Modern Wood School," is also available from *Southern Pine Assoc. National Bank of Commerce Building, P. O. Box 1170, New Orleans 4, La.*

Heating-Cooling. Packaged cooling and heating equipment for homes, stores, offices and industry is the subject of a 12-page bulletin which contains information about features, dimensions and capacities. *Worthington Corp., Advertising & Sales Promotion Dept., Harrison, N. J.**

Plumbing Fixtures. An 18-page booklet presents a complete line of plumbing fixtures — bathroom outfits, brass goods, shower stalls, steel enamelware and vitreous chinaware — and also illustrates packaged bathrooms in a variety of colors and white. *Gerber Plumbing Fixtures Corp., 232 No. Clark St., Chicago 1, Ill.*

Steel Raceways. Information on heavy-wall and thin-wall steel raceways is offered in a 20-page booklet which covers galvanized and black enameled rigid steel conduit, electrical metallic tubing and plastic-coated steel conduits. Pub. 18–255. *General Electric Co., Construction Materials Div. Advertising, Bridgeport 2, Conn.*

Electric Heat. *Catalog GC-101* (AIA File 30-C-44) lists the electric radiant glass heat panel line, and also both low-voltage and line-voltage thermostat controls, of *Berko Electric Mfg., 212–40 Jamaica Ave., Queens Village 28, N. Y.*

(Continued on page 358)

Where to get information on Stainless Steel in Architecture

Armco offers data on the use of stainless in contemporary design

If you are looking for materials to give you added freedom of architectural expression, consider the use of stainless steel. And for information on how you can most effectively utilize stainless, get in touch with Armco.

For years we've been working with architects, finding out how stainless can be most useful in building design. Much of this information has been compiled and is available to you in concise illustrated booklets.

These free booklets can be helpful to you in designing with stainless steel for economy, durable beauty and low maintenance costs.

Yours for the asking

1. How and Where to Specify Stainless Steel in Architecture

(AIA File No. 15-H-1)

This 20-page booklet describes stainless steels, outlines their properties and lists the forms and finishes in which they are supplied. It also lists available stainless components and about 300 different proved architectural applications for stainless, coded for easy reference.

2. Stainless Steel for Store Fronts and Building Entrances

(AIA File No. 26-D)

Installations and structural details of entrances and store fronts designed by leading architects are illustrated in this 40-page booklet. It includes pertinent data on economical designs and standard stainless steel products as well as a guide for specifying stainless.

3. The Design of Stainless Steel Curtain Walls

Reprint of an article on the Princeton University School of Architecture's study of stainless steel curtain wall construction. Originally published in October, 1955.

4. Why, How and Where Architects Specify Stainless Steel

(AIA File No. 15-H)

A pamphlet outlining what stainless can mean to architects and their clients. Typical interior and exterior uses of stainless are listed and illustrated.

5. Stainless Steel for Roof Drainage

(AIA File No. 12-i)

Why stainless steel assures long-lasting, attractive roof drainage systems for homes and commercial buildings is discussed in this 8-page booklet.

6. Architectural Uses of the Stainless Steels

(AIA File No. 15-H-1)

Illustrates successful new applications as well as older installations of stainless steel. Suggested construction details and descriptions of available forms are also included.

Stainless adds Versatility

By illustrating outstanding designs by leading architects, these reference materials show how stainless steel contributes unusual versatility to architectural design.

You'll find proof that rust-resistant stainless stays attractive and new-looking. It increases client satisfaction over the years, because low-maintenance costs save him money, too.

The booklets demonstrate how the inherent qualities of stainless steel—beauty, durability and strength—give you added opportunities to conceive unusually attractive building designs incorporating modern architectural concepts.

For complete information on architectural use of stainless steel, just fill out and mail the coupon to Armco today.

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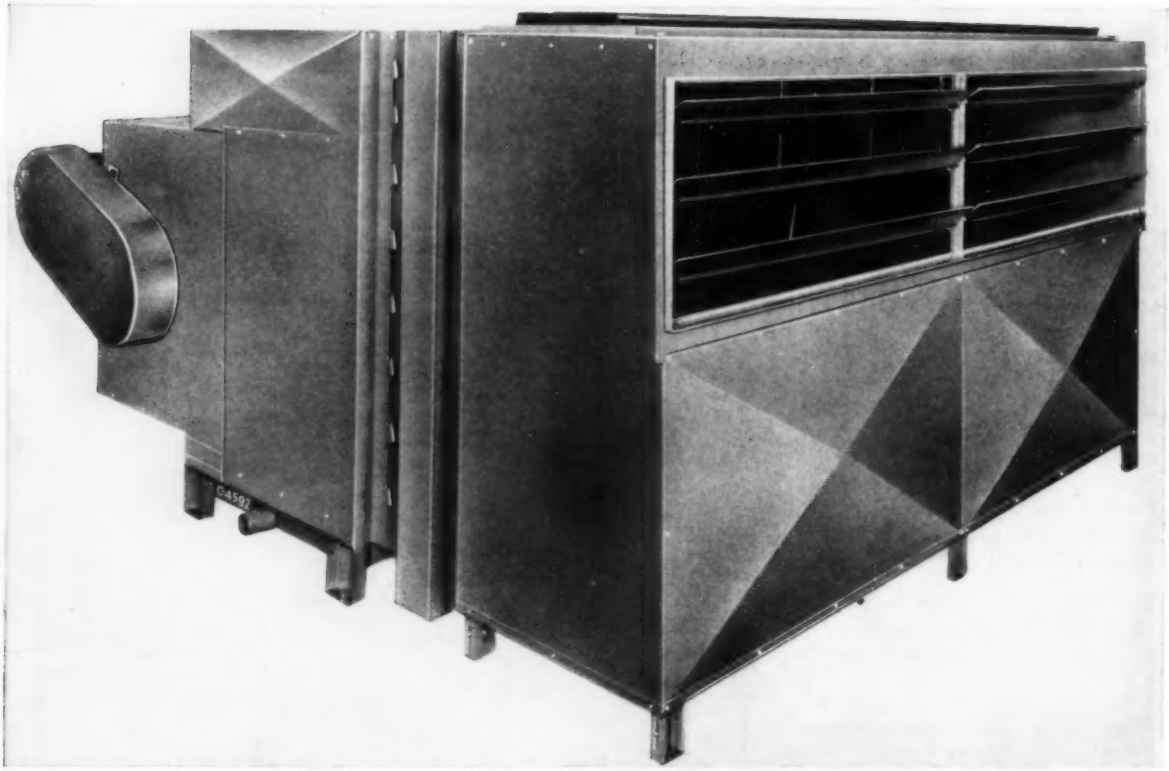
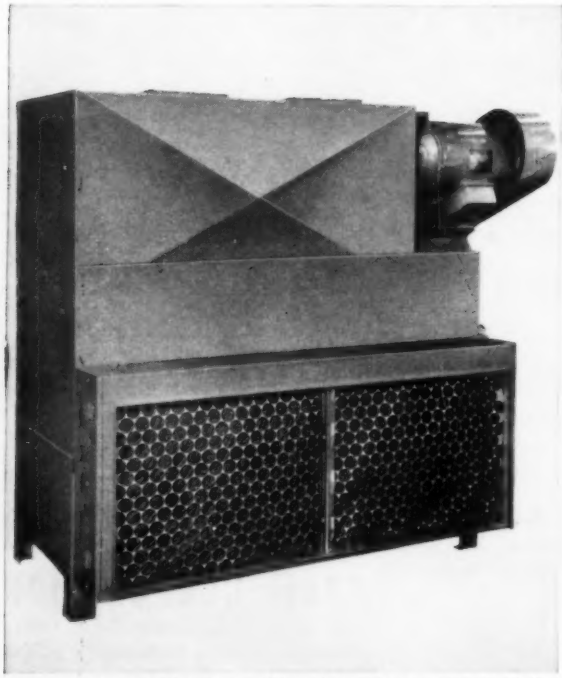
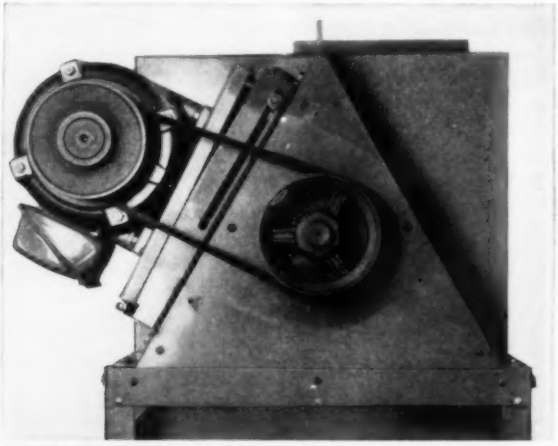
Announcing Worthington's



HORIZONTAL CONSTRUCTION of new Worthington air handling units allow them to be suspended from platform or ceiling (with hanger lugs.) Here is a large sized unit with damper section. Standard unit consists of fan section, fans, V-belt, drive (with variable pitch pulley), bypass and damper section, direct expansion or chilled water coils, and base section.



SMALLER SIZED UNITS are shipped completely assembled for horizontal or vertical arrangement shown above.



ADJUSTABLE MOTOR BASE, exclusive with Worthington, offers a 3½" variation in center distance. Adjusted with a single screw, a locking bolt secures base in proper position. This feature assures positive adjustment, enables you to keep belt tension correct. Belt turns on an adjustable pitch pulley which permits variation of fan speed and air quantity.

complete new line of flexible air conditioning units

Compact units—from 1½ to 106 tons—are easy to install—have many exclusive features

Here's a new line of unusually compact air conditioning units for commercial and industrial use in conjunction with central system air conditioning.

Designed by Worthington for easy installation, the standard unit consists of a base section, fan section and coil section. A bypass and damper section can be bolted directly to the coil face at the factory if desired, adding no height to the unit.

Units are extremely flexible. The fan section may be mounted with front, top or rear discharge. You can adjust speed for desired capacity and static pressures. Adjustable motor base offers 3½" variation in center distance for positive adjustment of belt tension. The motor mounts on the front, top, back or either end. Accessories are interchangeable between horizontal and vertical units.

Engineered by Worthington for long, trouble-free life, all sections are constructed of rugged fabricated steel, Bonderized and coated with a corrosion resistant enamel. Dynamically balanced, forward curved fans give maximum efficiency, quiet operation. (Fan shaft rides on lubricated-for-life bearings.)

For more facts on this new line of air conditioning equipment, write Worthington Corporation, Air Conditioning and Refrigeration Division, Section R-A-6-75, Harrison, N. J.

These features add up to flexibility

- **Exclusive** adjustable motor base assures simple, positive adjustment of belt tension.
- **Motor mounts** on front, back or either end of unit.
- **Fan discharge** can be front, top or rear, as you prefer.
- **Accessories interchangeable** between the horizontal and vertical units.

And look at these extras!

- **Up to 19,000 CFM!** You get more capacity from compact units.
- **Easy installation.** Choose either horizontal or vertical units.
- **Up to 81 different coil** combinations.
- **Lubricated-for-life** fan shaft ball bearings.
- **Accessibility!** Entire fan section can be easily removed. Removable panels and casings simplify inspection, oiling and adjustment.

Section R

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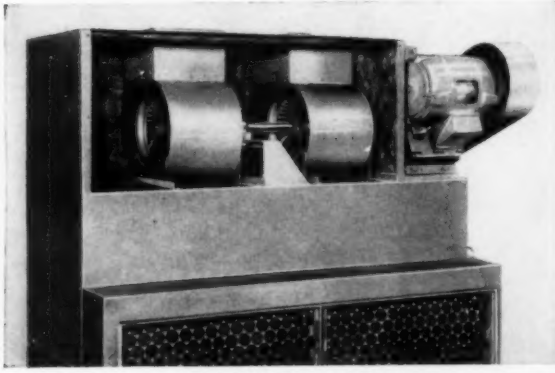
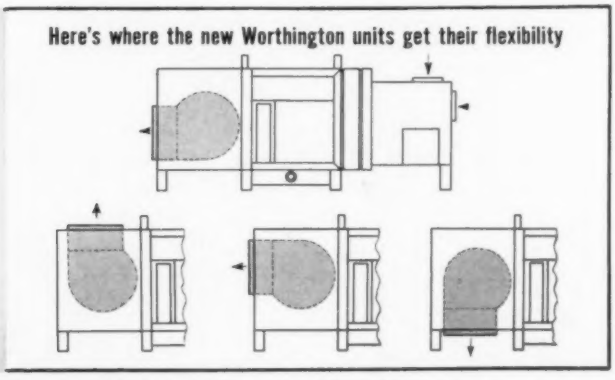
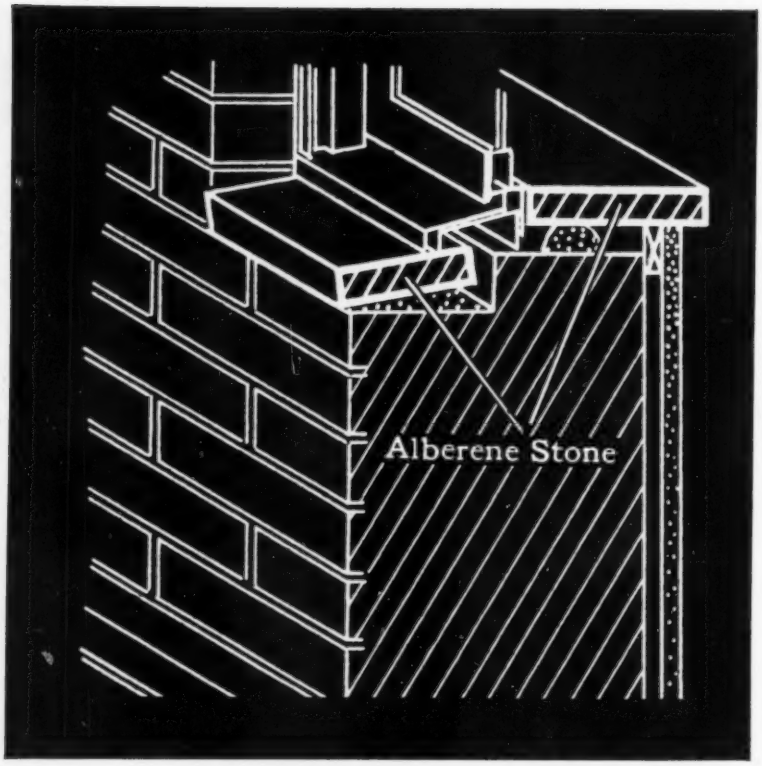




ADJUSTABLE DISCHARGE. Fan section may be mounted with top discharge as shown above. Or discharge may be directed to front or rear of the unit. See diagrams.



Let's talk "SILLS and STOOLS"

—that are both durable and attractive.

Alberene Stone—*the natural silicate stone*—is weatherproof. Its low absorbency prevents spalling and splitting in freezing temperatures. Its all-silicate mineral components resist chemical attack, staining and loss of surface polish. It requires no maintenance.

Alberene Stone is supplied in two grades: *Regular grade* is medium hard, durable and economical. It has high chemical, weather resistance. And a pleasing bluish gray color. *Serpentine grade* is very hard with even higher resistance and durability. It takes a high hone finish that is bluish black; also a polished finish that is jet black. Since there is a substantial difference between the two grades, it is important that the proper grade be clearly stated in the specifications.

That's why Alberene Stone window stools have recently been shipped to many of the finest new hospitals in the country including: Providence Hospital, Washington, D. C.; Baptist Memorial Hospital, Memphis, Tenn.; Coney Island Hospital, New York; and the Grady Hospital, Atlanta, Ga.

For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Avenue, New York 16, N. Y.

ALBERENE STONE

provides LOW ABSORBENCY protection

OFFICE LITERATURE

(Continued from page 354)

Building Specialties. Weather strips, caulking and glazing compounds, moulding and trim, thresholds, screen door grilles, numbers and letters, sliding door hardware, aluminum levels, binding and edging are presented in the 60-page 1956 catalog of *Macklanburg-Duncan Co., Box 1197, Oklahoma City 1, Okla.*

Metal Walls. *Mills Morable Walls* for offices, factories, schools, hospitals and other types of buildings are described in a new 1956 catalog (No. 56). Toilet compartments, shower and dressing rooms, shower units and hospital cubicles are covered in Catalog 56-T. (AIA File 35-H-6). *Mills Co., 968 Wayside Rd., Cleveland 10, Ohio.**

Air Conditioning. *Seasonaire* remote-type room air conditioning units for use in hotels, motels, institutions, office buildings and other multiple installations are described in *Bulletin 3355*, 16 pp (AIA File 30-F) from *Marlo Coil Co., 6137 Manchester Ave., St. Louis 10, Mo.**

Industrial Maintenance Finishes. Detailed technical information on paints especially made for various industrial applications is presented in a 48-page catalog (No. 56) (AIA File 25-B-2) from *Steelcote Mfg. Co., 3418 Grotiot, St. Louis 3, Mo.*

Reflective Insulation and Moisture Barrier. A data file contains sheets describing and diagramming *Lumaskin* as reflective insulation for walls, floors and attics and discussing its vapor-sealing properties, U factors and perm ratings. (AIA File 37-C-3) *Angier Corp., Framingham, Mass.**

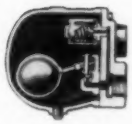
Hinges for Modern Buildings is the title of an 8-page catalog that describes a variety of hinges for churches, schools, hospitals, libraries and commercial buildings. *Hinges for Light Construction* is a 4-pager covering hinges for residences, motels, stores, etc. (AIA File 27B) *McKinney Mfg. Co., 1715 Liverpool St., Pittsburgh 33, Pa.**

Lock Fashions is a 12-page brochure which introduces "color-accent" locks for the home. It shows the open-back *Continental* and *Manhattan* designs and illustrates possible background paint colors, fabrics and wallpapers. *Schlage Lock Co., 2201 Bayshore Blvd., San Francisco, Calif.**

(Continued on page 362)

SARCO HEATING SPECIALTIES—a complete line

Float Thermostatic Steam Traps



Inverted Bucket Steam Traps

Thermodynamic Steam Traps

Radiator Valves

Radiator Traps

Strainers

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Motor Valves

Temperature Regulators

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- ★ Heating Specialties
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SARCO CONDENSATE AND VACUUM PUMPS

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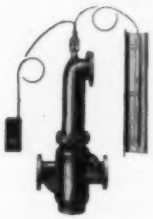
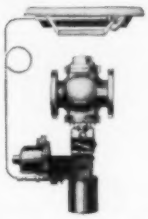
Complete Systems Include All Accessory Equipment



Modulating Controls for hot water and radiant heating



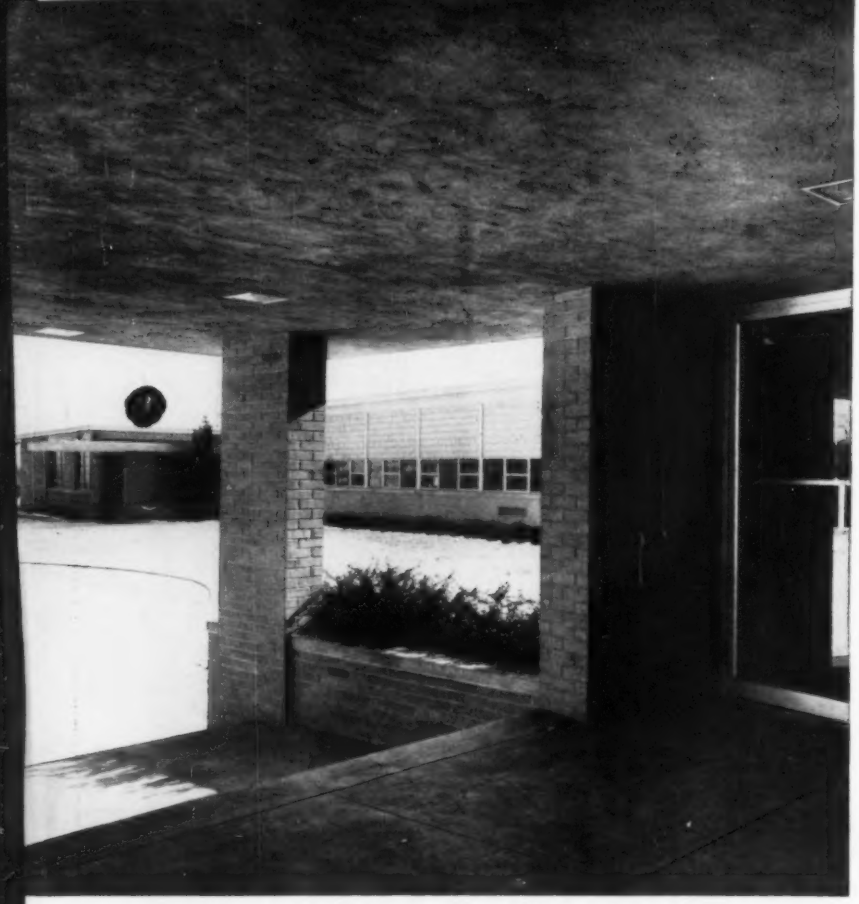
Modulating Controls for steam heating

Type AO Controls for hot water and radiant heating

SARCO*fin*

finned-tube and baseboard radiation

4007-B



In Pennsylvania—Monroeville Junior High School. Architect—Walter E. Schardt, Pittsburgh; Consulting Engineer—Leland W. Cook, Pittsburgh; Contractor—Guy Miller Company, Pittock, Pa.

New Buildings Go Up Faster At Lower Cost With Steeltex®

Across The Nation, Designers And Contractors Use Pittsburgh Steeltex Because It Saves Money

In Daly City, Calif. . . . down in Austin, Tex. . . . at Monroeville, Pa. . . . in Hagerstown, Md., Pittsburgh Steeltex is:

- **Helping build better, stronger** buildings of all kinds.
- **Cutting construction costs**—"five per cent," said one builder; "five cents per square foot," said another.
- **Shortening building time**—"we saved six weeks," said the builder in California.

Steeltex, the sturdy steel wire mesh reinforcing which carries its waterproofed form right on its back, was the choice of the men who designed and constructed the representative buildings on these pages. They agree Steeltex does a better job at lower cost.

In California—Westlake Shopping Center's J. C. Penney Company Department Store in Daly City. Architect & Engineers—Lloyd Gartner, A.I.A. and Associates of San Francisco; Contractor and Owner—Henry Doelger Builder, Inc., of Daly City.

J. C. Penney Company Store in Daly City, Calif., (lower left) is a totally fireproof department store with 93,350 square feet in its basement, first floor and second floor. The architect said:

"The facility and speed with which Steeltex Floor Lath was installed and the whole operation was completed resulted in a saving of many weeks of valuable construction time."

Henry Doelger Builder, Inc., builder and owner of the Westlake Shopping Center which includes the J. C. Penney store, credits Steeltex with "about six weeks saving in time and about five per cent in cost."

Monroeville Junior High School, near Pittsburgh (upper left) used approximately 110,000 square feet on floor slabs with the contractor, Guy Miller Company, declaring:

"At a conservative estimate, 1½ cents per square foot was saved in time and material as a result of using Steeltex instead of other methods."

The American National Bank Of Austin, Tex., (upper right) used about 7,000 square feet of Steeltex. Contractor J. M. Odom said: "On steel joist spans under 25 feet with a spacing of not over 32 inches we save approximately five cents per square foot over most other types of deck."

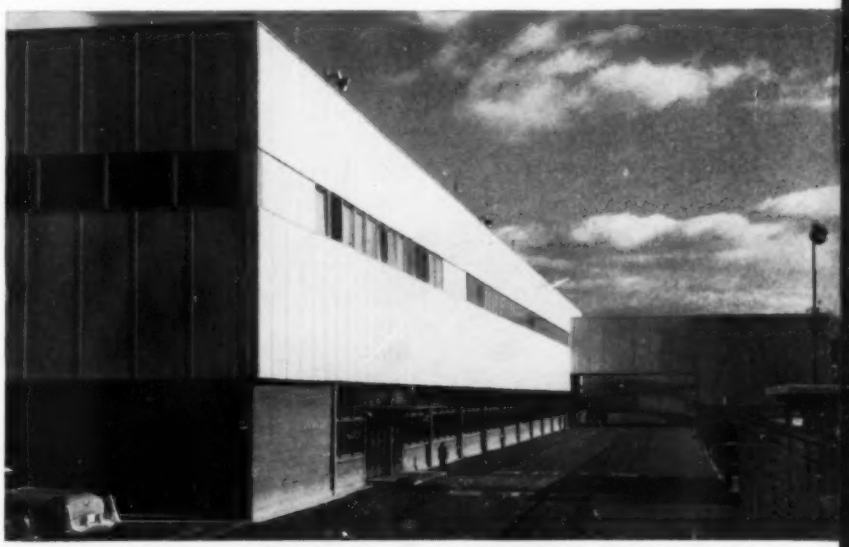
Fairchild Aircraft Division, Office Building, Fairchild Engine and Airplane Corp., at Hagerstown, Md., (lower right) Steeltex was used for 46,000 square feet of office space. The architect estimated "a Steeltex-supported slab over bar joists, spaced 24 inches on center, to be 40 to 45 per cent less expensive than a conventional four-inch reinforced slab using wooden forms, and over steel beams, six to eight feet on center."

Peter A. Strobel of the consulting engineering firm of Strobel and Salzman said the savings due to the use of Steeltex on the Fairchild building "are quite substantial and, according to our estimate, vary between $.40 to $.70 per square foot."

The Steeltex story is the same in the East, West, North or South. Designers and builders favor Steeltex because it makes better roofs and floors and speeds construction.

You, too, can benefit from Steeltex's advantages. For more details on the Steeltex story, write for the new booklet "Steeltex, Backbone of Concrete, Plaster and Mortar." Or call the nearest district sales office to learn how you can do a better job in less time when you use Steeltex.

In Texas—American National Bank of Austin, Tex. Architect—Kuehne, Brooks and Barr, of Austin; Contractor—J. M. Odom of Austin.



In Maryland—Office Building for Aircraft Division of Fairchild Engine and Airplane Corp. in Hagerstown, Md. Architect—Fordyce & Hamby, New York City; Consulting Engineer—Strobel & Salzman, New York City; Contractor—Calabro Construction Co., Inc., Linden, N. J.

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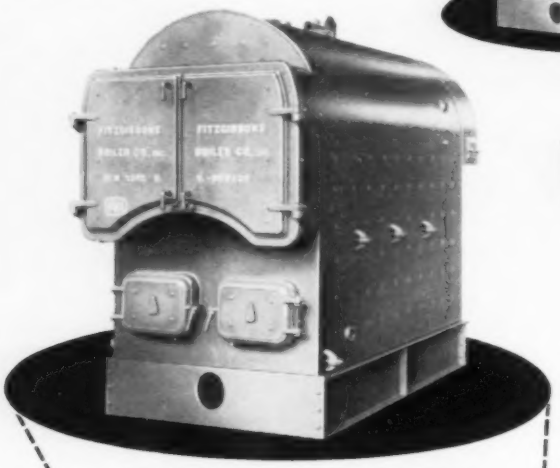
Another FITZGIBBONS STEEL BOILER for this expanding school

BECAUSE THEY PERFORM UP TO EXPECTATIONS, Fitzgibbons Boilers are re-specified time and again by satisfied architects, engineers and building owners. In the case of this modern school in Lunenburg, Mass., a Fitzgibbons "D" Type Firebox Boiler was installed when the building was first erected. A subsequent addition to the school called for another Fitzgibbons Boiler. Now a third Fitzgibbons gets the call for another addition. It all adds up to a solid performance record, right in keeping with "the best in steel boiler heat." — FITZGIBBONS.

For complete information on "big building" heating boilers, including complete, packaged units, write for SW 56, Fitzgibbons Boiler Company, Inc., 101 Park Avenue, New York 17, N. Y.



SBI

Architect:
Harry J. Korslund
Norwood, Mass.

Engineer:
Buerkel & Company, Inc.
Boston, Mass.

Heating Contractor:
J. G. Lamotte & Son, Inc.
Worcester, Mass.

Lunenburg Junior Senior High School, Lunenburg, Mass.

SINCE 1886 MOST ECONOMICAL IN USE THE FITZGIBBONS BOILER

The Fitzgibbons Boiler®

OFFICE LITERATURE

(Continued from page 358)

Class III Fans, especially designed with extra sturdiness for high velocity air conditioning systems, are described in Trane Bulletin DS-348-C. Another bulletin, DS-399, provides data on *CenTra-Vac* centrifugal refrigeration equipment. *The Trane Co., La Crosse, Wis.*

Recessed Incandescent Lighting is described in two new bulletins: *Budget Lites,* 2 pp, covers a recessed, prewired fixture, and *78% Efficient,* 4 pp (AIA File 31-F-2), covers a controlled downlight. A third bulletin, 556H, is entitled *Shapes and Shades in Accent Lighting. Litecraft Mfg. Co., 8 East 36th St., New York, N. Y.**

Aluminum Windows and Curtain Wall Systems are presented in an "Idea File," which contains a 28-page booklet (AIA File 16-E) and separate scaled detail sheets. *The William Bayley Co., 1200 Warder St., Springfield 99, Ohio.**

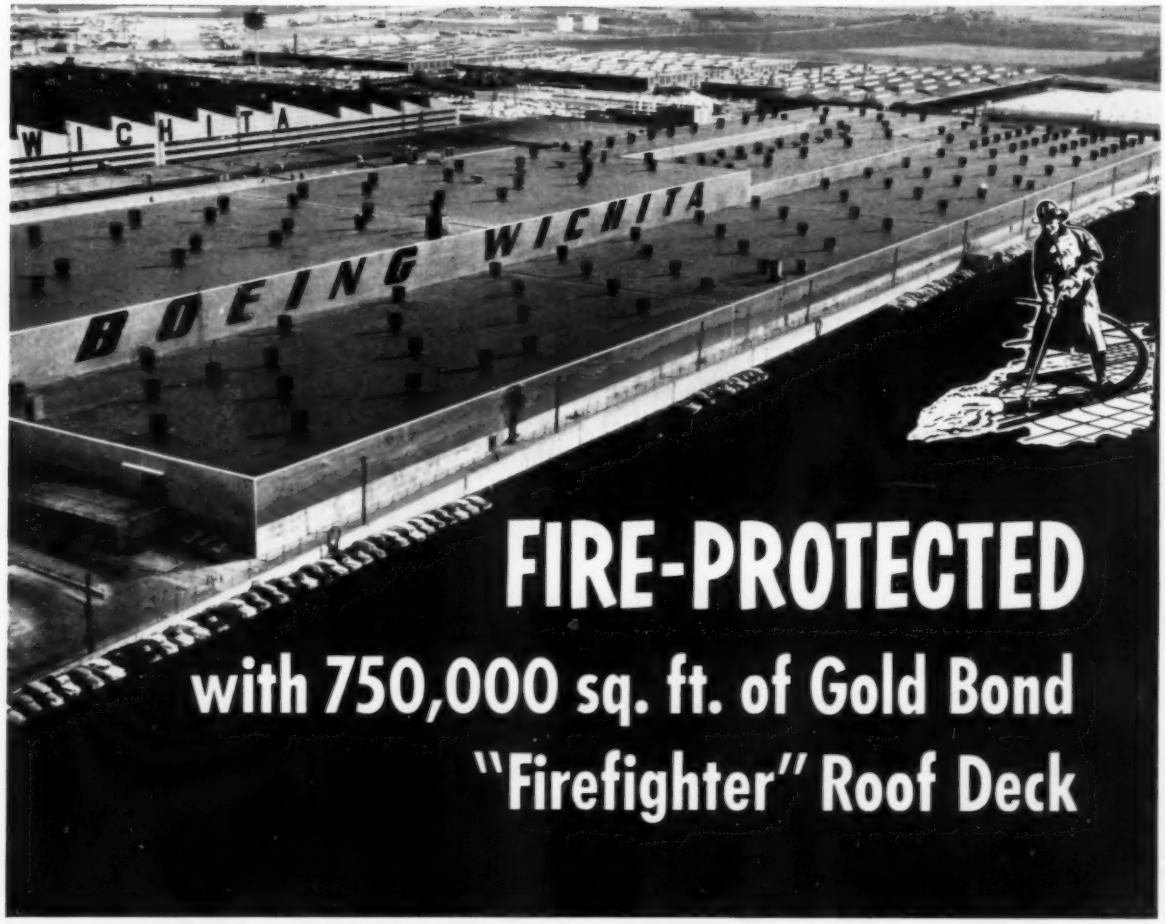
Cooling, Heating, Ventilating, and Air Conditioning of schoolrooms by means of Herman Nelson *Amervent* units in mild climate areas, where winter heating requirements are minimized and cooling problems are critical, are described in a 12-page booklet from *American Air Filter Co., Inc., Herman Nelson Unit, Louisville 8, Ky.*

Automatic Sprinklers. A 12-page brochure describes *Rockwood* wet and dry sprinkler systems and discusses the engineering advantages of them. *Rockwood Sprinkler Co., 38 Harlow St., Worcester 5, Mass.*

Caulking. *Del* synthetic rubber caulking compounds are discussed in a 4-page folder which covers uses and applications and presents some buildings in which they have been used. *David E. Long Corp., 220 East 42nd St., New York 17, N. Y.*

Plastics in Modern Lighting is the title of an 8-page brochure which presents the physical and chemical characteristics and other features of translucent plastic louvers for lighting fixtures. *American Louver Co., 4845 No. Elston Ave., Chicago 30, Ill.*

Correction. The 16-page brochure, *Marble for the Home,* listed on page 208 of the January issue is available from *Vermont Marble Co., Proctor, Vt.*



FIRE-PROTECTED
with 750,000 sq. ft. of Gold Bond "Firefighter" Roof Deck

Materials Building—Boeing Airplane Company, Wichita, Kansas; *General Contractor:* Martin K. Eby Construction Company, Inc., Wichita; *Roof Deck Applicator:* American Cornice Works, Wichita; *Engineers and Architects:* Wilson & Co., Salina, Kansas.

Boeing Wichita's new Materials Building is shielded against fire with *three quarters of a million* square feet of Gold Bond "Firefighter" Gypsum Roof Deck. Incombustible gypsum forms a natural fire guard for the valuable Boeing equipment within. Gypsum will not burn, warp or transmit high temperatures when exposed to heat and fire.

Famous "Firefighter" Roof Decks go up fast because they're poured-in-place. *As much as 30,000 sq. ft. of gypsum can be poured in a single day.* Decks can take full load capacity in less than one hour because of the quick setting action of gypsum. Low dead load permits lighter supporting structures and save substantially on construction costs.

Gold Bond "Firefighter" Roof Decks, installed by approved contractors, are adaptable to all roofs—pitched, barreled or flat. They are easily molded in place around roof irregularities such as skylights and vents.

Send in the coupon below for full details, including description, application, specifications, design tables and on-the-job illustrations.

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Build better with Gold Bond

"FIREFIGHTER" GYPSUM ROOF DECK

National Gypsum Company, Dept. AR-46, Buffalo 2, N.Y.
Gentlemen:
Please send me Technical Bulletin No. 589 with complete details on Gold Bond "Firefighter" Roof Decks.

Name.....

Address.....

City.....*County*.....*Zone*.....*State*.....

Lighting by DAY-BRITE Lighting Fixtures makes the big difference...

LLE H & T NATIONAL GYPSUM J SYSTEMS SIMPLEX CEILINGS BURGESS-MANNING RADIANT PANEL LO
HAERTEL SECURITEE SYSTEMS CUPPLES ALUMI-COUSTIC GRID PHILLIPS FAMCO SUSPENSION SANYME
ROLLFORM CONCEALED SYSTEMS HAERTEL SECURITEE-LINE JOHNS-MANVILLE SANACOUSTIC LOXIT S
JOHNS-MANVILLE Z & L CELOTEX ACOUSTI-LINE SANYMETAL SCREWLOCK SYSTEM HAERTEL SECURITEE
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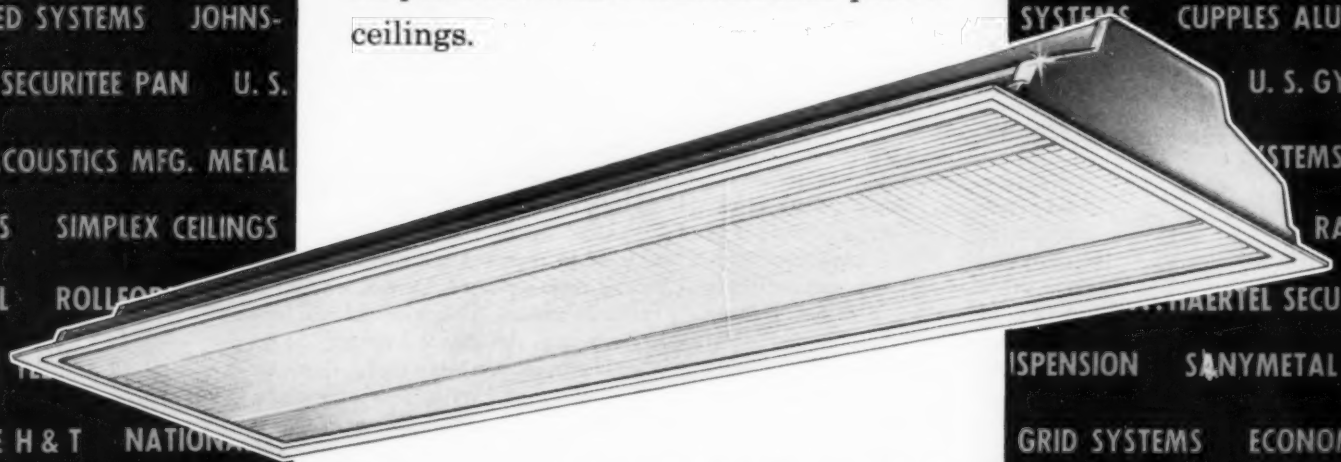
SYSTEMS EASTERN CONCEALED SYSTEMS JOHN
LOK PRODUCTS DRIVE-LOK GRID ACOUSTICS MFG. METAL PAN SANYMETAL NAILOCK CHANNEL JOHI

Announcing...

A new line of integrated recessed lighting, compatible with ALL 63 ceiling systems, including—

Acoustical ceilings using exposed runner, exposed panel, exposed grid, concealed mechanical, metal "Tee-Bar" suspension... also conventional plaster ceilings.



New, shallower 12-in.-wide Troffers, available with plastic Cleartex, egg-crate louver or low-brightness Controlens* enclosures.

61133

* ® Holophane Co., Inc.

NATION'S LARGEST MANUFACTURER

CCESSO SYSTEMS EASTERN CONCEALED SYSTEMS JOHNS- MANVILLE H & T NATIONAL GYPSUM J SYSTE
OUSTI-LINE EASTERN SEMI-EXPOSED SYSTEM HAERTEL SECURITEE PAN U. S. GYPSUM PERFATONE TAC
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LINE BURGESS-MA
LOCK CHANNEL TACH-FAST
EE GRID ACOUSTICS MFG. SUSPENSION SYSTEMS
G RADIANT PANEL LOK P DRIVE-LOK GRID ROL
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Get details of new economies

Your Day-Brite representative has full details of the economies of Day-Brite's new line of integrated recessed lighting. Call him—you'll find this information valuable.

24-in.-wide MOBILEX,® available with translucent plastic, egg-crate louver or glass enclosures.

Day-Brite Lighting, Inc.
5465 Bulwer Ave. • St. Louis 7, Missouri

DECIDEDLY BETTER
DAY-BRITE
Lighting Fixtures

OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT

Hospital Speeds Patients' Records from Entry to Discharge

Nursing Stations

Woman's Hospital, Detroit

Station at Clinic Laboratory

Station at Business Office

Plus...

Stations At: Clinic Office • Entry • Out-Patient Department • Maintenance

with a LAMSON AIRTUBE AUTOMATIC SWITCHING SYSTEM

Lamson eliminates all inconvenience to patients caused by delay in records handling. Relieves busy personnel from message carrying. Around the clock, it automatically delivers laboratory test reports, time cards, nurses' reports, correspondence and other intra-hospital communications.

For automatic discharge at a pre-determined station, the station number is dialed by turning two bands near the carrier's top. An electrical circuit is opened between two of the metal rings on the carrier. When brushes at a station contact these rings, the circuit is closed. This actuates a switch which throws a deflector across the carrier's path . . . discharging it.

A Lamson Airtube Automatic Switching System can be installed quickly . . . with low initial and operating costs. Localized wiring saves space and expense. Eliminates wiring leading from a central location. Station controls consist of switch, power unit and deflector. The number of stations can be expanded as the need arises. For complete details, mail this coupon today.

LAMSON

Plants in Syracuse and San Francisco
Offices in Principal Cities

Lamson Corporation
4544 Lamson Street, Syracuse 1, New York
Please send me a copy of "Lamson Airtube Automatic Switching System."
NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE___ STATE_____

THE RECORD REPORTS

WASHINGTON REPORT

(Continued from page 32)

scheme for coordinating planning at all levels of government. Others are to be delineated.

Emphasizing the extensive overlap of the various categories, the Coordinator defines public works as including: highways, navigation, air fields, flood control, irrigation, schools, medical facilities including hospitals, public buildings for administration, welfare institutions, water supply and sewage disposal plants, air and water pollution control facilities, national parks, recreation, land management and soil conservation.

The Psychology of It

Noting that public construction represents only three per cent of the Gross National Product, General Bragdon said he considers this type of construction nevertheless has a powerful psychological effect on people because they can see direct results of public expenditures; this as opposed to use of funds for, say, some types of foreign aid.

All construction comprises 15 per cent of the GNP, new construction 11 per cent. Federal public construction alone is less than one per cent of GNP while state and local public works together account for just over two per cent.

BUILDING INDUSTRY NEEDS STILL MORE APPRENTICES

In spite of a marked increase in apprenticeship activities in the building trades in recent years, further pressure for the training of new men is required if the labor needs of the expanding building programs are to be met.

This view was expressed by John S. McCauley, of Labor Department's Bureau of Apprenticeship, in a recent issue of *Construction Review*, a Department of Commerce publication.

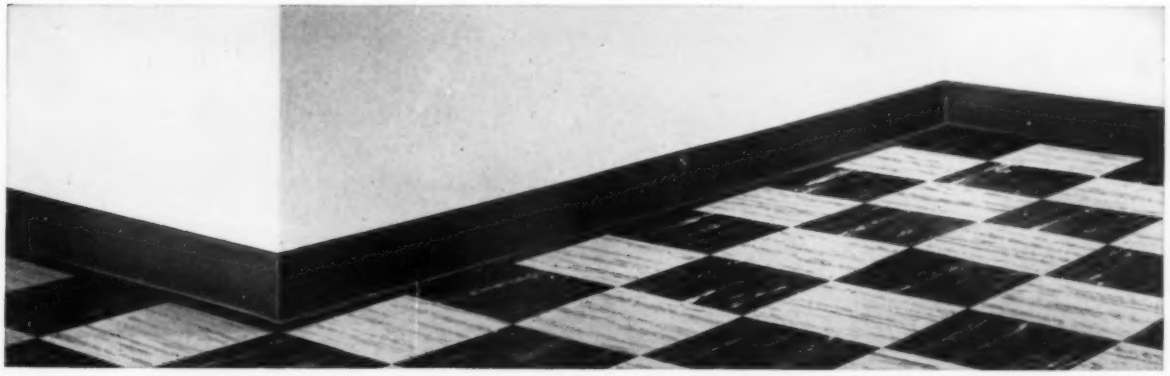
A further increase is needed, especially in carpentry and painting, Mr. McCauley said.

The adequacy of apprentice programs is measured by the extent to which journeymen losses are replaced. For every 1000 journeymen working in 1954 in 52 major cities, some 17 were lost to the industry through death, retirement, or disability; but only 15 apprentices completed training programs for each 1000 journeymen.

(Continued on page 370)

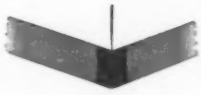
NEW KENCOVE VINYL BASE INSTALLATION METHOD

Provides neater, better looking corners

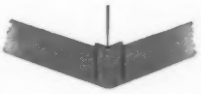


KENCOVE VINYL BASE CORNERS GIVE YOU THESE ADVANTAGES OVER PRE-FABRICATED CORNERS SHOWN BELOW

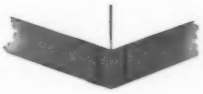
WON'T KICK OFF



NO COLOR VARIATION AT CORNERS



NO VARIATION IN HEIGHT

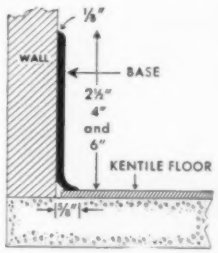


ELIMINATES JOINTS

New KenCove Vinyl Base installation method allows mechanics to mold corners right on the job. The cost is less than prefabricated corners with short 2" and 3" wings which do not allow adequate surface contact for the adhesive. 48" KenCove molded around inside or outside corners allows maximum contact surface. Rubber base cannot be molded without scoring which weakens it, and its factory-made corners seldom fit the irregular and off-plumb corner sizes found on the job. KenCove vinyl base resists scuffing, cleans easily, does not show mop marks.

ASK FOR A FREE DEMONSTRATION from your KENTILE Sales Representative. Contact any of the offices listed below:

KENCOVE SPECIFICATIONS



KenCove Vinyl Wall Base, as made by Kentile, Inc., top set type, ribbed back, ⅛" thick, (2½" high) (4" high) (6" high), rounded top, ⅝" wide at bottom; colors (Sumac Red) (Black) (Brown) (Gray) (Green). Inside and Outside Corners to be molded on the job from KenCove Wall Base. Adhesive: KenFast No. 2 Adhesive as made by Kentile, Inc. for base.

KENTILE, INC., 58 SECOND AVENUE, BROOKLYN 15, NEW YORK • 350 FIFTH AVENUE, NEW YORK 1, NEW YORK • 705 ARCHITECTS BUILDING, 17TH AND SANSOM STREETS, PHILADELPHIA 3, PENNSYLVANIA • 1211 NBC BUILDING, CLEVELAND 14, OHIO • 900 PEACHTREE STREET N.E., ATLANTA 9, GEORGIA 1016 CENTRAL STREET, KANSAS CITY 5, MISSOURI • 4532 SO. KOLIN AVENUE, CHICAGO 32, ILLINOIS • 4501 SANTA FE AVENUE, LOS ANGELES 58, CALIFORNIA

VERSATILITY THAT GIVES "Personality" TO COMMUNITY BUILDING

Ceco Curtainwalls Offer Architects Opportunity to Design Individuality into Whole Business Areas or Single Structures

What is it that makes one shopping center, or one structure, for that matter, stand out over all others? It is individuality. That quality in people creates personality. And in building, distinctive character can result in "personality," too. To help architects achieve the unusual, we suggest Ceco Curtainwall Construction, tailor-made to each individual job, offering unusual versatility…adding new beauty to old neighborhoods…bringing a look of the future to new business communities. Here is fresh simplicity

made possible by a "skin" of windows and panels. Erection time is speeded . . . dead-weight is cut . . . by this modern method of enclosing structures. If you want to put individuality into the buildings you design, so they bear the mark of your creation, you have a new medium in Ceco Curtainwall Construction. Ceco Engineers can help you in the planning stage with data concerning such important subjects as practical application, load transfer, anchoring and cleaning. So won't you call us?

CECO STEEL

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General Offices: 5601 W. 26th Street, Chicago 50, Illinois

Metal Windows and Doors • R/C Duct Floors • Steel Joists • Metal Roofing • Lathing Products

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Shopping centers—retail stores—achieve a pleasing appearance through the color of Ceco Curtainwalls made of aluminum or steel windows and insulated panels . . . erection time is speeded . . . dead-weight is cut.

Buildings radiate a clean, colorful, fresh look with Ceco Curtainwalls. Used with originality, they can symbolize the trademark of the creative designer . . . bring a look of the future to business communities.

Office buildings offer opportunity for individuality when built with Ceco Curtainwalls. Here is the Meramec Building, Clayton, Missouri. Benjamin Shapiro & Robert Tisdale, architects. Manuel Lasky, owner.

Fresh as all outdoors . . . Daylight plus ventilation any way you want it, anywhere you want it. Now you can have famous SKYDOMES with built-in ventilation for all interior areas. **Wascolite Skyvent** — daylight plus gravity ventilation through adjustable louvers. **Wascolite Ventdome** — daylight plus positive ventilation provided by motor-driven air exhaust. **Wascolite Airdome** — daylight plus natural ventilation. Opens and closes like a window to the sky. Removable screen. Write for new folder.

WASCO PRODUCTS, INC.
Cambridge 38, Massachusetts
Wasco Chemical (Canada), Ltd., Toronto, Ontario

THE RECORD REPORTS

(Continued from page 366)

ON THE CALENDAR

April

1 Annual Conference, Child Study Association of America — Sheraton-Astor, New York City

4–6 Eighth Annual National Engineering Conference, American Institution of Steel Construction — Lehigh University, Bethlehem, Pa.

6–7 Meeting of the Executive Committee of the Board of Directors, American Institute of Architects — Hotel Biltmore, Los Angeles

9–10 A conference on Urban Design and the Role of Planners, Architects and Landscape Architects in the design and development of cities; lectures, seminars, exhibition and discussions — Harvard University, Cambridge, Mass.

11–13 National Housing Conference — Hotel Statler, Washington, D. C.

12–14 South Atlantic Regional Conference, American Institute of Architects — Washington Duke Hotel, Durham, N. C.

13–20 Texas Architects Week; Theme, "50 Years of Architectural Education in Texas"

16ff Exhibition of stained glass: Christopher Scadron, stained glass designer, and Michael Savoya, architectural designer; until May 16 — Architectural League, 115 E. 40th St., New York City

20 First Annual Midwest Architectural and Engineering Institute, co-sponsored by the University of Kansas Architectural and Engineering School and the Kansas City Chapter of the Producers' Council — Union Building, University of Kansas, Lawrence, Kan.

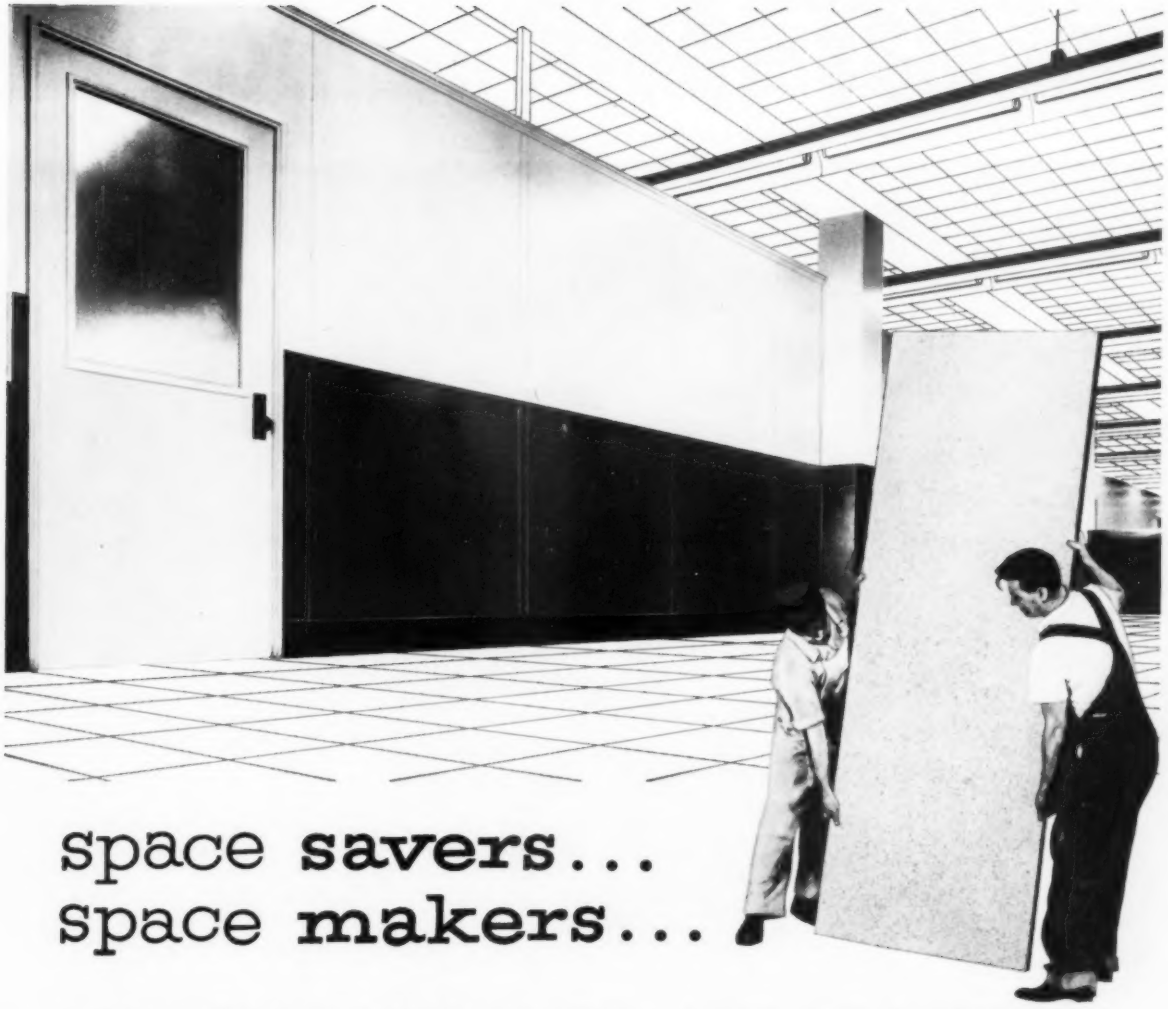
23–25 The 25th Anniversary Conference, American Institute of Decorators — Sheraton Palace Hotel, San Francisco

23ff Part II, British Industries Fair (including building products); until May 4 — Birmingham, England

26–27 National meeting, American Institute of Electrical Engineers — Bradford Hotel, Boston

27–28 Middle Atlantic Regional Council conference and workshops, American Institute of Architects — DuPont Hotel, Wilmington, Del.

(Continued on page 374)



space savers...
space makers...

J-M Class A Asbestos Walls are movable . . . save space and make space . . . are noncombustible, moderately priced . . . come in pleasing colors

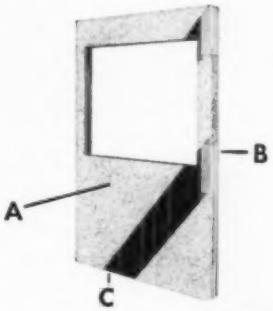
New Johns-Manville Class A Movable Walls offer you advantages never before combined in an asbestos movable wall. They are modestly priced. They are noncombustible. They have a textured, stipple finish in restful colors. They reduce maintenance and relocation costs to a new low.

The finish of Johns-Manville Class A Movable Walls is a tough, hard film much thicker than on the usual movable partition. It is mar- and scratch-resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, it can be touched up inexpensively to look like new . . . and, unlike other types of factory-finished partitions, can be repainted with ordinary paint.

Undivided responsibility for a complete job

These flush or glazed partitions are erected as well as furnished by the Johns-Manville Construction Department complete with doors, door hardware, glass and trim.

For details about J-M Class A Asbestos Walls, consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Department AR, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.



A Noncombustible asbestos-cement surfaces

B Generous reinforcing for added strength

C Noncombustible all-mineral insulating core

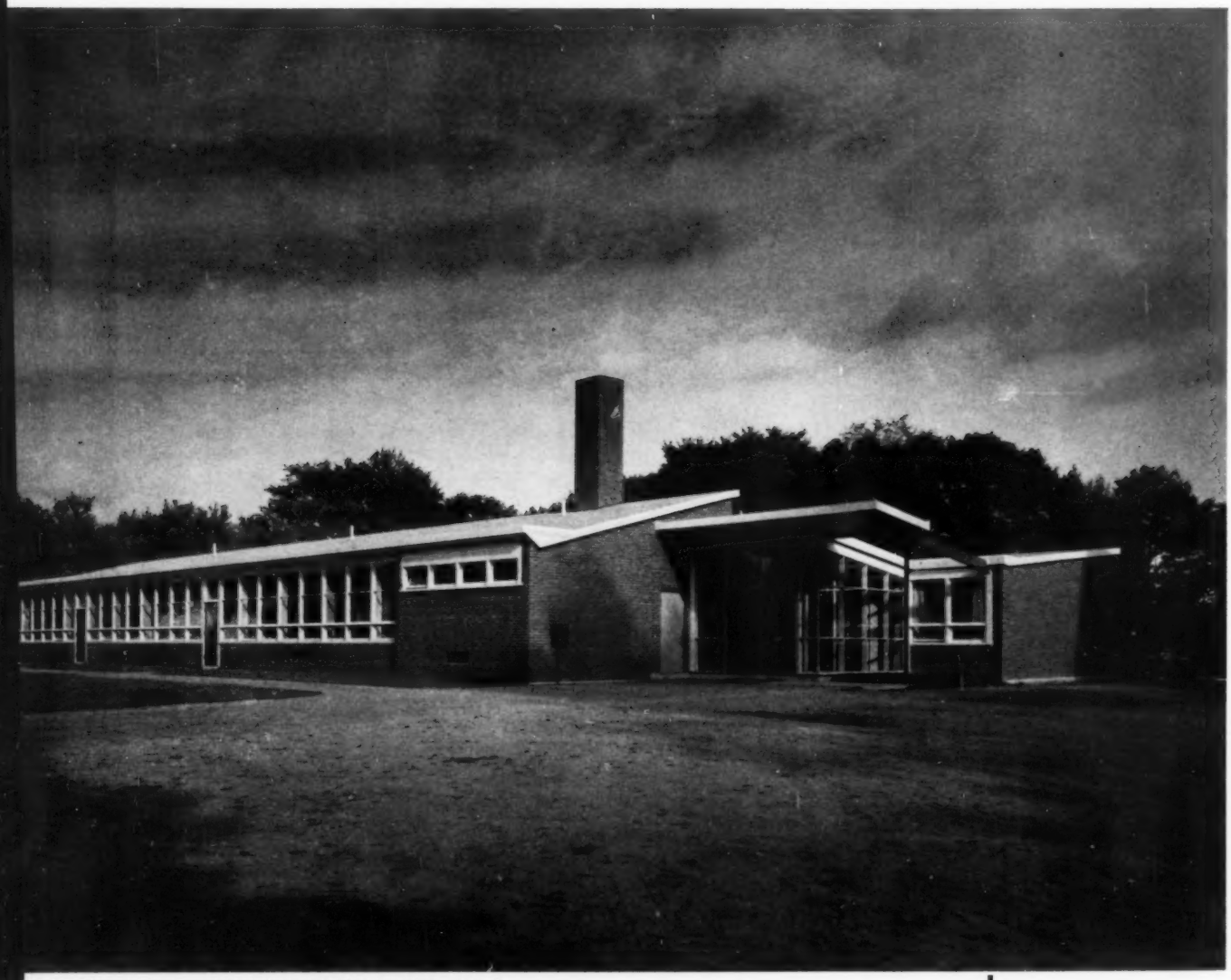
See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

JOHNS MANVILLE PRODUCTS

Johns-Manville

Unique Maine school gets

More classroom comfort per



Washburn Elementary School, Auburn, Maine. Superintendent of Schools: Robert S. Ireland; Architects and Engineers: Alonzo Harriman, Inc.; Mechanical Contractor: L. W. Haskell Company.

DRAFT STOP

AAF herman nelson

UNIT VENTILATOR PRODUCTS

System of Classroom Cooling, Heating and Ventilating

BETTER AIR IS OUR BUSINESS

Illinois Steam Heating Specialties

Herman Nelson Console Heaters

Herman Nelson Portable Heaters

Herman Nelson Heating, Ventilating Units

dollar with DRAFT|STOP!*

Controls drafts without added heat load

AUBURN, Maine's Washburn Elementary School needed an addition. But the budget dictated: economical building cost, *low* operating cost. What's more, there could be absolutely no sacrifice in either teaching efficiency or student comfort. In short, Washburn officials demanded *more classroom comfort per dollar.*

One important economy was the use of end-on classrooms for space flexibility. This required positioning the unit ventilator at the end of the room, rather than the side, with air flow at right angles to exposed beams. A natural for DRAFT|STOP; because it distributes air so evenly, so comfortably—with *no* "dead spots", *no* "cold pockets".

DRAFT|STOP heats only when heat is necessary . . . *saves* fuel when it's not. It even controls downdrafts without using extra heat. Today, demand increases for *more classroom comfort per dollar.* That's why you see so many new DRAFT|STOP installations. Want more facts? For 16-page case study, write Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky.

**Patented (there are no substitutes!)*

Herman Nelson gives you more classroom comfort per dollar!

- *the first practical, high efficiency HOT WATER heating element for unit ventilators.*
- *DRAFT|STOP, the first unit ventilator to eliminate window downdrafts—without increasing heat load.*
- *LIGHT|STOP, the first accessory to adapt the unit ventilator to audio visual classrooms.*

Whenever more classroom comfort per dollar is offered, look for the name Herman Nelson.

A deep, end-on classroom in the new Washburn Addition. Cost of this addition was lower by 97¢ per square foot than earlier addition with conventional side-on classrooms.

AMERICAN AIR FILTER COMPANY, INC.

Herman Nelson
Unit Blowers

Herman Nelson
Horizontal Unit Heaters

AAF ROTO-CLONES
For School Shops

Herman Nelson
Vertical Unit Heaters

THE RECORD REPORTS

(Continued from page 370)

30ff Annual meeting, Chamber of Commerce of the United States; until May 2 — Washington, D. C.

May

4 Annual Conference for Engineers, sponsored by the College of Engineering — Ohio Union, Ohio State University, Columbus

5 Annual meeting, Indiana Society of Architects — Marott Hotel, Indianapolis

7–9 Annual meeting, American Institute of Planners — Hotel Sheraton-Biltmore, Providence, R. I.

7–9 Annual Meeting, Air Conditioning and Refrigeration Institute — The Homestead, Hot Springs, Va.

7–11 Convention and Exposition, National Restaurant Association — Navy Pier, Chicago

11–12 The 76th Annual Convention, Michigan Engineering Society — Pantlind Hotel, Grand Rapids

12 Pre-Convention meeting of the Board of Directors, American Institute of Architects — Hotel Biltmore, Los Angeles

12–20 "Showcase for Better Living"; 1956 Home Building Exposition — The Coliseum, New York City

14–17 Conference of American Society of Mechanical Engineers (to coincide with First Design Engineering Show) — Convention Hall, Philadelphia

15–16 Industrial Nuclear Technology Conference, sponsored by Armour Research Foundation of Illinois Institute of Technology as a feature of its 20th anniversary observance — Museum of Science and Industry, Chicago

15–18 The 88th Annual Convention, The American Institute of Architects — Hotel Biltmore, Los Angeles

16–18 Second Annual Convention, Prestressed Concrete Institute — Hollywood Beach Hotel, Hollywood, Fla.

21–22 Fifth Annual Meeting, Building Research Institute — Sheraton-Brock Hotel, Niagara Falls, Ont.

21–24 Annual meeting, Air Pollution Control Association — Statler Hotel, Buffalo

24–25 Technical conference, National Warm Air Heating and Air Conditioning Association — Edgewater Beach Hotel, Chicago

28ff Conference on School Building Design, sponsored by Teachers College; until June 1 — Columbia University, New York City

30ff The 1956 British Architects' Conference; until June 2 — Norwich, England

June

3–6 Summer annual meeting, American Society of Refrigerating Engineers — Cincinnati

4–8 The 60th annual meeting, National Fire Protection Association — Hotel Statler, Boston

4–8 Knoxville convention, American Society of Civil Engineers — University of Tennessee, Knoxville, Tenn.

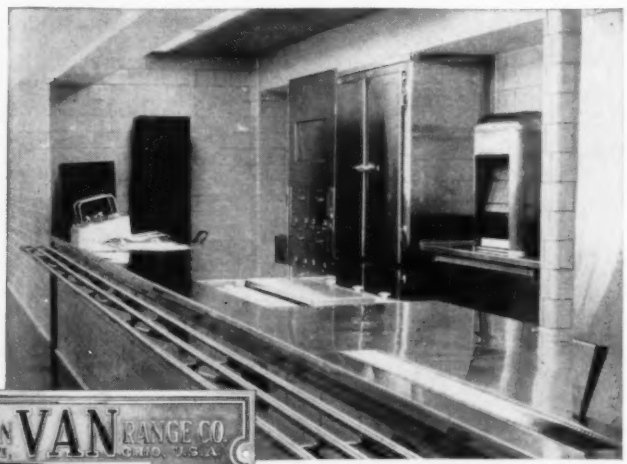
6–10 The 49th Annual Assembly, Royal Architectural Institute of Canada — Banff Springs Hotel, Banff

7–8 Annual convention, Minnesota Society of Architects — Hotel Nicollet, Minneapolis

11–15 Seventh National Plastics Exposition, sponsored by the Society of the Plastics Industry,

(Continued on page 378)

Architects: Roger Allen & Associates Grand Rapids



THE JOHN VAN RANGE CO. CINCINNATI, OHIO, U.S.A.

Central Michigan College of Education
Mt. Pleasant • West Foods Commons Bldg.

Van collaborated on food service with architect

★ Serving 1500 meals daily now and providing for tripled expansion of this institution, with the latest in design and sanitation features, this installation was accomplished only through the collaboration of the architects with the Van engineer.

★ The Michigan State Board of Education heartily approved of the architects' use of Van's *century of experience* in food service planning.

★ Any food service operator or his architect would find convincing evidence in this West Foods Commons Building of Van's ability to serve him.

The John Van Range Co.

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HOW TO DESIGN FOR LOW COST... in light construction

LIGHTSTEEL structural sections are carefully designed for maximum economy strength-to-weight ratio. Waste and high cost of overdesigned framing are eliminated, yet LIGHTSTEEL carries all the benefits of conventional steel framing.

LIGHTSTEEL cuts construction costs because joists, studs, track and bridging are designed to fit together for ease of assembly and welding in the shop or on the job. Because of the light weight of the sections, complete wall units can be trucked to the job site where they can be erected in a few minutes. Additional savings are effected by precisely engineered openings in the sections which simplify through-frame installation of wiring and plumbing.

The LIGHTSTEEL nailing groove is an alternate feature which permits nailing of collateral materials to double studs and joists.

Want to know more about economical LIGHTSTEEL? Fill out the coupon below and mail it today.

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What is LIGHTSTEEL?

Penmetal LIGHTSTEEL structural sections are fabricated from structural-grade, strip steel by cold forming and are designed specifically for strength, light weight and low cost. Now, for the first time, the light building field can adopt steel framework economically.

The components include a complete range of studs, joists and accessories for the steel framing of houses, schools, hospitals, light commercial and industrial structures and exterior curtain wall framing in multiple story buildings — all hitherto limited to less desirable materials.

PM-94

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☐ LIGHTSTEEL catalog, SS-9, ☐ LIGHTSTEEL technical manual, SS-8.

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Five Key Men Describe Unusual Flexibility, Compactness, Economy of G-E Distribution System

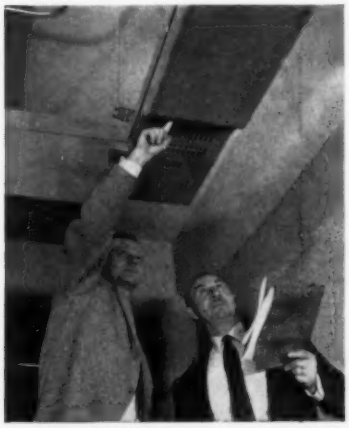
In their own words, Architect, Consulting Engineers, Contractors tell how they benefit, along with tenants and owners, in new Indianapolis bank building

"Simplicity and flexibility were the keynotes around which the entire building was planned," according to Emmett G. Fowler, partner, and E. C. Vollrath (kneeling), chief electrical engineer, of Bevington, Taggart and Fowler, consulting engineers in Indianapolis since 1925. "We selected the General Electric system—switchboards, motor control centers, feeder busways, and panelboards—because it's the least complicated and most flexible—and its quality is unquestionable!" Architect and contractor agree, and they speak for themselves on the next page. Pictured with Mr. Vollrath are G. M. Wadleigh, vice president, and William R. Dabbs, engineer, of Sanborn Electric Company, electrical contractors in Indianapolis, as they inspect the General Electric Type DA7093 motor control center.

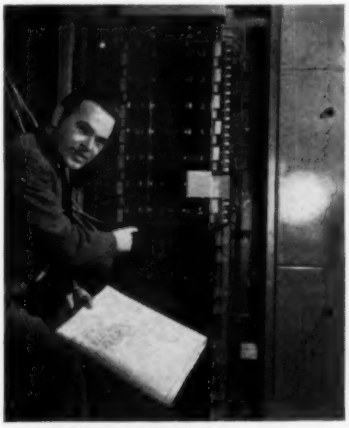
The imposing, new Indiana National Bank Building, rising 14 floors above East Market Street in Indianapolis, is equipped with G-E "system-engineered" distribution equipment from basement to penthouse. Architects, D. A. Bohlen and Son • Consulting Engineer, Bevington, Taggart and Fowler • Electrical Contractor, The Sanborn Electric Company • Electrical Distributor, General Electric Supply Co., Indianapolis.

"Compact?" continues Mr. Vollrath, "General Electric's design of the main switchboard and motor control center line-up permitted us an almost 50% space-saving factor. The unique back-to-back placement enabled us to utilize both sides of this power equipment in a little more than half the space normally required. By the way, we were delighted with the excellent service from G. E. The General Electric equipment was actually delivered prior to our own deadline."

"General Electric engineers gave us built-in flexibility," says Mr. Dabbs, "when they took the specifications and came up with a motor control system that meets the needs of this modern building *precisely*. Optimum circuit control makes it possible to change over to larger motors in a matter of minutes." G. E.'s efficient "one source of supply" also impressed Mr. Dabbs. "We were pleased," he said, "with G. E.'s all-out cooperation, including their rapid-fire delivery."



"A unique installation from start to finish," says Mr. Wadleigh, who has been responsible for many important projects in the Midwest, as he inspects the General Electric busway. "Ease of operation and maintenance were considered essential. In one compact package, G. E. not only met all the immediate power needs of the building but gave us the advanced flexibility we'll need for years to come."



"Yes, maximum flexibility," says Robert C. Bohlen of D. A. Bohlen and Son, architects. "With our G-E system we can provide power to any piece of tenant equipment. If new tenants come in, rearrangement of office space can be accomplished easily. Our confidence in General Electric has been further solidified by the all-out cooperation that was so apparent throughout this project."

Add them up! "*Ease of operation and ease of maintenance—one compact package,*" says the contractor . . . "*Simplicity and flexibility,*" says the consulting engineer . . . "*All-out cooperation throughout the project,*" says the architect. These words *could* be your words. Let General Electric work with *you* on your next project! A phone call to your nearest G-E representative is all the invitation we need.

G-E System-Engineered Equipment Offers These "7 Basic Advantages"

The General Electric Secondary Distribution System can include motor control centers, switchboards, busway, unit substations and panelboards. This "system-engineered" equipment offers seven **work-together** advantages • **True extendability** because G-E standardized components are especially designed for easy addition or relocation • **Easy-to-assemble** • **No loss when moving** • Practically 100% re-use of materials • Complete relocation of loads without rewiring • **Maximum electrical efficiency** from components designed to work together • **One source of supply** for all components • **Skilled planning service** from the G-E Engineer who is selling not just components but "system-engineered" equipment with a built-in future. **Send for Motor Control Center Bulletin (GEA-6367) to Distribution Assemblies Department, Plainville, Conn.**

Progress Is Our Most Important Product

GENERAL ELECTRIC

THE RECORD REPORTS

(Continued from page 374)

Inc. — Coliseum, New York City

17–21 Semi-annual meeting, American Society of Mechanical Engineers — Hotel Statler, Cleveland

17–22 Annual meeting, American Society for Testing Materials, and the 12th Exhibit of Testing and Scientific Apparatus and Laboratory Supplies — Atlantic City

17–30 Third Annual Material Handling Training Conference — Lake Placid. Details from: Director, Material Handling Training Conference, 56 Robbins Road, Lexington 73, Mass.

18–20 Semi-annual Meeting, American Society of Heating and Air-Conditioning Engineers — Shoreham Hotel, Washington

18ff Fourth Annual School Plant Planning Workshop, sponsored by the Department of Architecture and Architectural Engineering, under the auspices of the College of Education; until July 20 — University of Colorado, Boulder, Colo. Information: Prof. Thomas L. Hansen, A.I.A., Head of the Department of Architecture and Architectural Engineering, University of Colorado

23ff Sixth International Design Conference; until July 1 — Aspen, Colo.

25–29 Summer and Pacific General Meeting, American Institute of Electrical Engineers — San Francisco, Cal.

25–29 Annual meeting, American Society for Engineering Education — Iowa State College, Ames, Ia.

27–29 Annual meeting, Stained Glass Association of America — Copley Plaza Hotel, Boston

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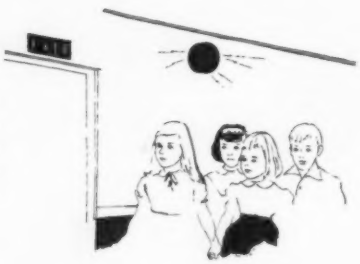
Telephone and Fire Alarm Systems for SCHOOLS

Use Couch FIRE ALARM SYSTEMS to

EVACUATE THE CHILDREN
LOCATE THE FIRE
ALERT THE FIRE DEPARTMENT

Whatever the type of fire protection you need, whatever the size of the building, a Couch fire alarm system has the dependability that saves lives and property. Write for Bulletin 124.



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All the needs of interior communication can be met by Couch telephone systems. For both private conversation and group conference, a Couch telephone installation will save you valuable time. Write for Bulletin 121.

DATA SHEETS AND BULLETINS AVAILABLE UPON REQUEST.

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OFFICE NOTES

Offices Opened

• Hall & Ribyat, Consulting and Design Engineers, is the newly formed partnership of Victor E. Hall and Seymour Ribyat. Offices are at 1534 Glenwood Ave., Syracuse 4, N. Y.

• Harwell Hamilton Harris, Architect, and Frank H. Sherwood, Engineer, Associate, have established offices for the general practice of architecture at 3613 W. Seventh St., Fort Worth 7, Texas.

• Nelson A. Kenworthy, Consulting Engineer, has announced the opening of offices at 630 Fifth Ave., New York, N. Y.

• J. Martin Rosse, A.I.A., has established offices at 45 Second St., San Francisco, Cal.

Firm Changes

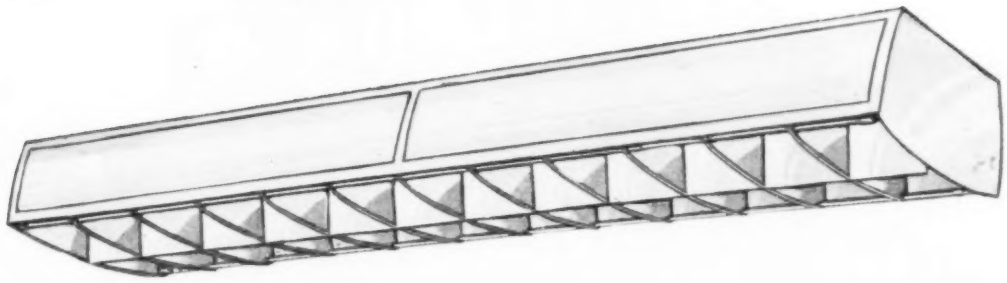
• Bolt Beranek & Newman, Inc., acoustical consultants of Cambridge, Mass., have opened a West Coast office at 435 S. La Cienega Blvd., Los Angeles 48, Cal. Dr. William J. Gallway directs engineering activities, and Jack B. C. Purcell the architectural acoustics.

• Alfred Watts Grant has announced his partnership with Oliver J. Bryan Jr. for the practice of architecture; the firm will be known as Alfred Watts Grant and Associates. William C. Haldeman is an associate in the firm. Offices are at 1640 Court Palace, Denver 2, Colo., and at 7½ E. Bijou St., Colorado Springs, Colo.

• Ketchum, Giná & Sharp have announced that D'Anson Isley and Robert D. MacKinnon Jr. have been made partners in the firm; both men are architects and have been with the firm since 1946.

(Continued on page 382)

Sun-Lite SCHOOL LIGHTING



STUDENT LINE
NO. 2362

A recent installation of "Student" Units,
St. Alphonsus High School, Dearborn, Michigan
Donaldson & Meier, Architects

Sun-Lite's No. 2362 is designed to provide upward and downward lighting and maximum eye comfort

We invite Architects and Engineers to write for full particulars

Sun-Lite

SUN-LITE MANUFACTURING CO.

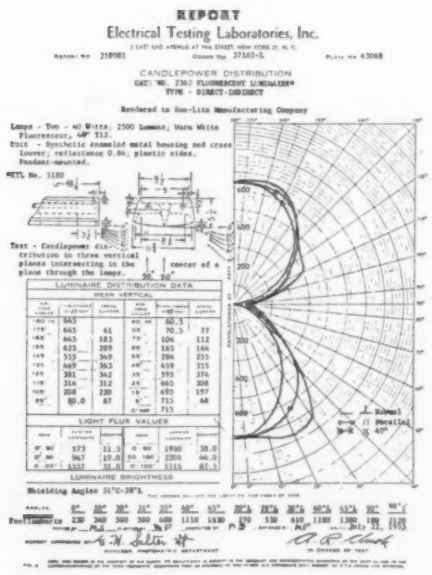
2355 BELLEVUE AVE. • DETROIT 7, MICH.

Unequalled for Quality of Lighting, Durability and Safety

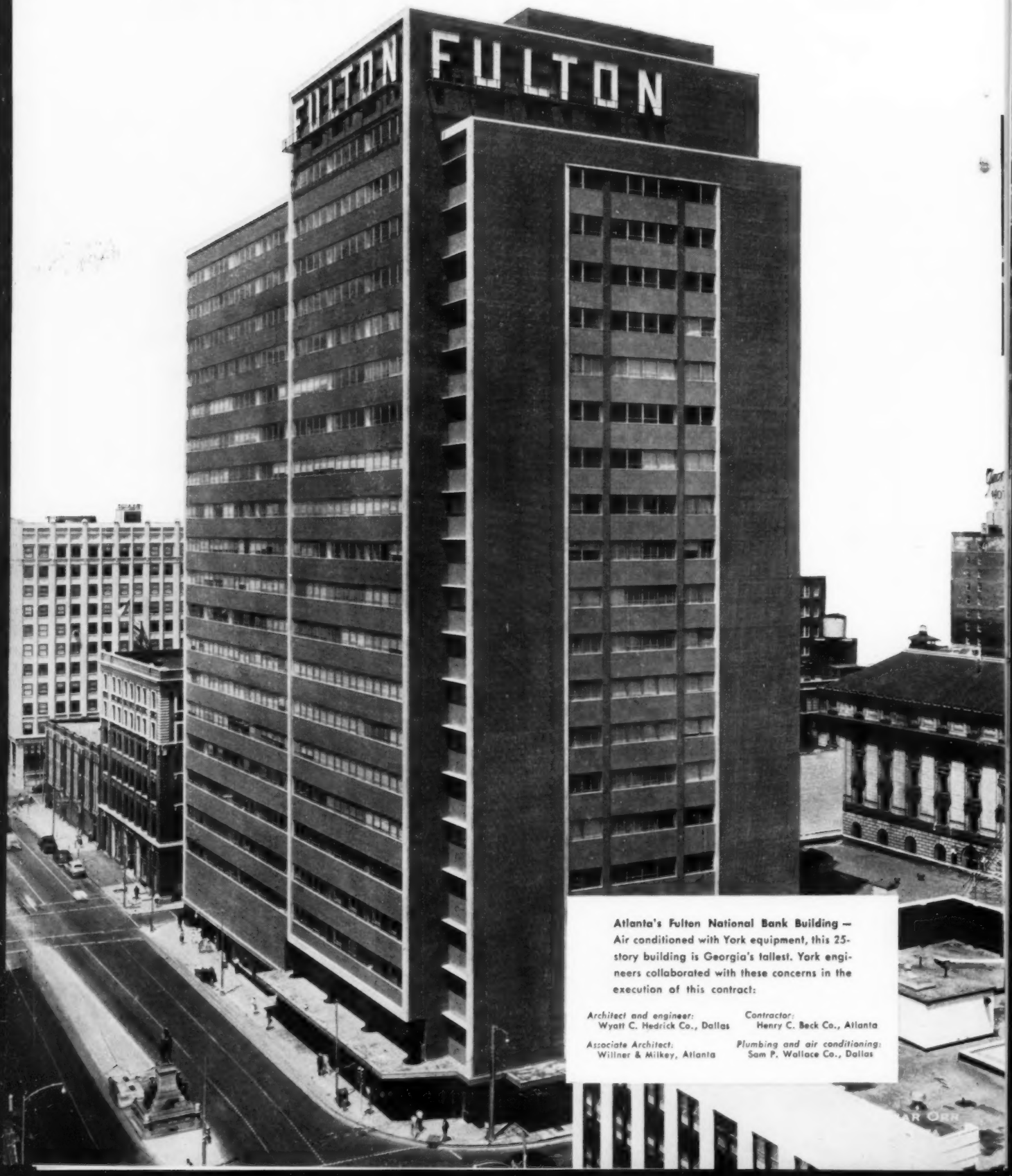
Low installation cost and ease of maintenance are designed into the rugged, yet simple construction of the "Student" fixture.

Louver assembly hinges from either side with sufficient space between louvers to permit easy cleaning. Plastic panels are encased in steel frame and snap on and off in seconds. The "Student" is available for individual use, central or end suspension, and for use in continuous rows.

Entire unit is finished in a Hush White Color to minimize glare and hot spots, yet provide highest efficiency.


REPORT
Electrical Testing Laboratories, Inc.
CANDLEPOWER DISTRIBUTION
LUMINAIRE DISTRIBUTION DATA
LIGHT FLUX VALUES
LUMINAIRE BRIGHTNESS

York's prior planning service helps



Atlanta's Fulton National Bank Building — Air conditioned with York equipment, this 25-story building is Georgia's tallest. York engineers collaborated with these concerns in the execution of this contract:

Architect and engineer: Wyatt C. Hedrick Co., Dallas

Contractor: Henry C. Beck Co., Atlanta

Associate Architect: Willner & Milkey, Atlanta

Plumbing and air conditioning: Sam P. Wallace Co., Dallas

assure maximum return on air conditioning investment

Economic analysis — York engineers work closely with builders and owners to determine air conditioning requirements, and projected investment cost per sq. ft. of floor area.

Specification — York makes all systems of air conditioning. The York engineer studies your problem objectively, then assists in the selection of the right system for your particular job.

Design — Your architect or consulting engineer can call on the York engineer early for his suggestions in solving space and design problems, thus helping to avoid expensive changes later.

York sales engineers work with you, your architect, your consulting engineer and your builder from the very first planning stage. York calls this *Prior Planning Service*, and it helps you in these three ways:

1. The York Engineer helps analyze your air conditioning requirements. Your average climate conditions, number of occupants and traffic conditions — these are some of the considerations weighed by the York engineer in making his study of your building. With his broad experience and extensive training, he can analyze your problem and make available to you the facts and technical data you need.

2. The York engineer can help you select the proper air conditioning system. York supplies *all* systems of air conditioning and refrigeration, depending upon the requirements of the job. Thus, your York engineer studies your problem *objectively*, recommending the system that is right for your job.

3. The York engineer can assist in space and architectural design. He can be of aid to your architect or consultant, supplying him with the information he needs to make best use of the available space to guarantee maximum effectiveness of whatever system is chosen.

Clearly, York's Prior Planning Service depends upon superior engineering ability. Realizing this, York selects engineering graduates carefully, then trains them in classrooms, in research and development laboratories, in the factory and in the field. You may rely with complete confidence upon the good judgment and recommendations of the York engineer.

Call him in *early* in your planning.

Training — York sales engineers complete an intensive post-graduate course at York. This includes classroom study, plus work in the factory, in the York laboratories and in the field.

York refrigeration air conditioning

the quality name in air conditioning

HEADQUARTERS FOR
MECHANICAL COOLING SINCE 1885

YORK
CORPORATION

THE RECORD REPORTS

(Continued from page 378)

• The firm of Roy W. Leibsle, Architect, has become Roy W. Leibsle and Associates with the addition of architect Sam B. Dixon to the staff. Offices are at 3702 Alameda Rd., Houston 4, Texas.

• Manson Carver Associates announce that Edward Jackson, A.I.A., and Dixon Wilson, A.I.A., have been named partners in the firm. The firm is located at 517 N. Washington, Lansing 33, Mich.

• Mayer and Whittlesey, Architects-Engineers-Town Planners, have announced that M. Milton Glass has become a partner in the firm, which will be known hereafter as Mayer Whittlesey & Glass, with offices at 31 Union Square, New York, N. Y.

• Seelye Stevenson Value & Knecht, Consulting Engineers, have announced that Samuel C. Bast, supervising structural Engineer, has been appointed an associate. The firm is located at 101 Park Ave., New York 17, N. Y.

New Addresses

Edward Larrabee Barnes, A.I.A., 23 E. 67th St., New York 21, N. Y.

Robert S. Beresford, Architect, 3016 Tilden St., N.W., Washington 8, D. C.

Copeland, Novak and Israel, Architects, 744 Lexington Ave., New York, N. Y.

Herman H. Feldstein, A.I.A., 1023 Spitzer Bldg., Toledo 4, Ohio

Edward H. Fickett, A.I.A., 7421 Beverly Blvd., Los Angeles 36, Cal.

E. M. Freeman and Associates, Consulting Engineers, Henry C. Beck Bldg., Shreveport, La.

George Hay, Architect & Land Planner, 1 W. Second St., Media, Pa.

Harry S. King, A.I.A., 18936 Wyoming, Detroit 21, Mich.

Oliver and Smith, Architects, 333 W. Freemason St., Norfolk 10, Va.

Patterson & Worland, Architects, 1413 K St., N.W., Washington 5, D. C.

Ricciuti Associates, Architects-Engineers, 521 Royal, New Orleans 16, La.

Willis L. Stephens, A.I.A., 594 S. Edgewood Ave., Jacksonville, Fla.

Marcel Villanueva, A.I.A., 7 Sterling Drive, Orange, N. J.

Whittaker and Wagg, Architects, 543 Bastion St., Victoria, B. C.

Woodward, Oliver, Smith & Associates, 333 W. Freemason St., Norfolk, Va.

CORRECTION

Credit should have been given to Robert Evans as supervising architect for the Home Economics Building at the University of California at Davis (AR, February 1956, pp. 177–180), for which Hervey Parke Clark and John F. Beutler were architects. At the time that the building was designed, Mr. Evans was supervising architect for the Davis campus; he has since been made chief architect, University of California.

The RECORD may have led some of its readers to infer, incorrectly, that Haag & d'Entremont, who designed the Howard Johnson Motor Lodge shown on p. 180 of our February issue, are architects for the projected chain of Johnson motels. Actually, the firms of Rufus Nims and Carl Koch & Associates established standards for the motels, with Mr. Nims' firm handling Johnson design in the south and Mr. Koch's firm handling design in the north.

(More news on page 386)

WADE

HAS SOLVED THE

carrier·fitting

SELECTION PROBLEM.

There are many good reasons for specifying off-the-floor closets. Today's architect is fully aware of the sanitation, ease of maintenance and eye appeal of the off-the-floor installation.

But there has been one good reason for not specifying wall-hung closets; namely, the difficulties encountered by the mechanical engineer in selecting the correct carrier-fitting.

Wade's new carrier-fitting selection manual solves this problem. You can select the correct carrier-fitting in a few seconds from one concise chart.

WRITE DEPT. B., WADE MFG. CO.,
ELGIN, ILLINOIS, FOR YOUR COPY.

WADE
carrier·fittings

WADE MANUFACTURING CO.
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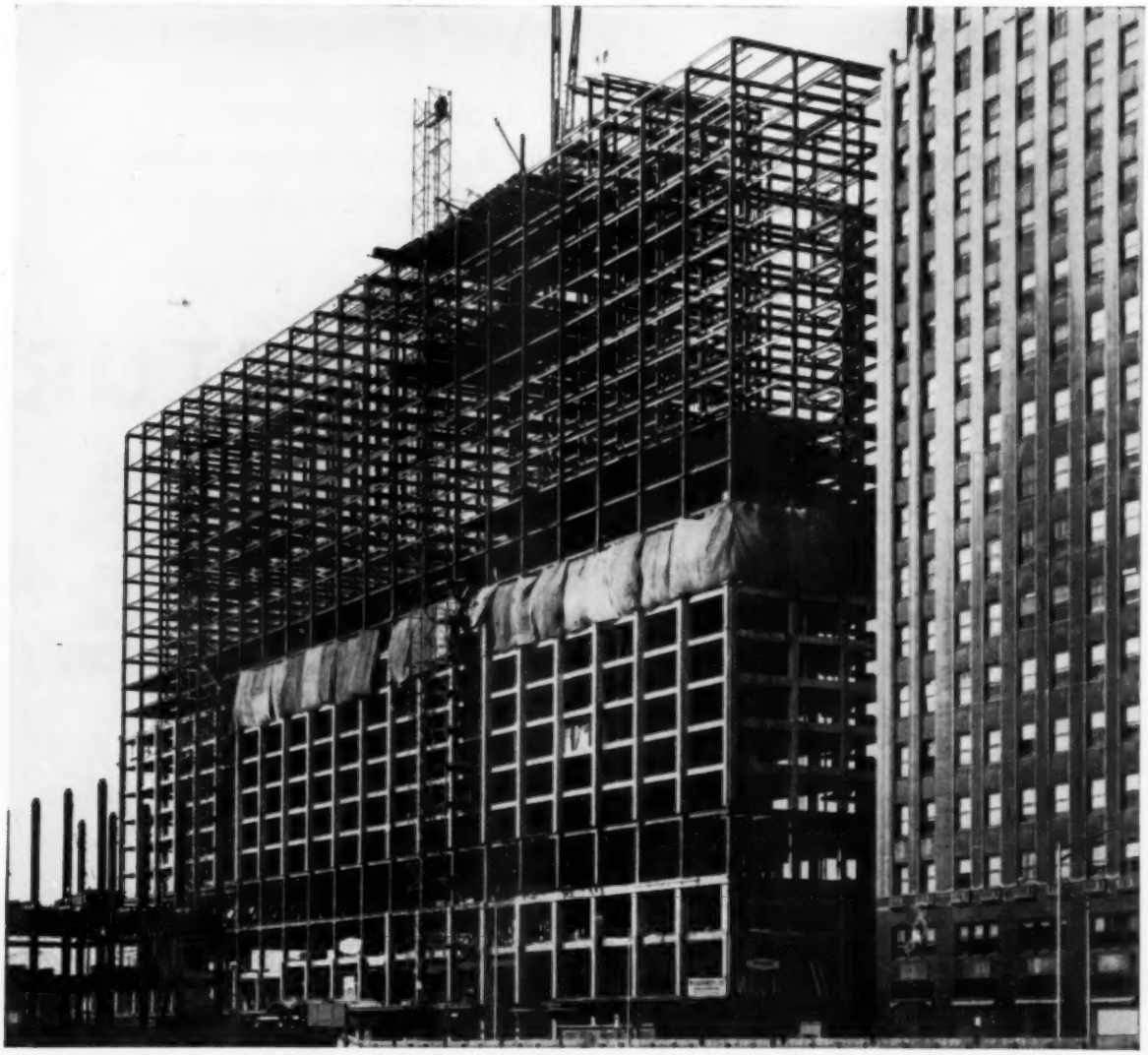

Architect: Perry, Shaw, Hepburn & Dean, Boston. *Structural Engineer:* Maurice A. Reidy, Boston. *Builder:* McCloskey & Co., Philadelphia.

Steel rises for new 22-story hotel in Philadelphia's Penn Center

When this photograph was taken, late last year, Bethlehem erection crews had just topped out steelwork for Philadelphia's new Sheraton Hotel. A newsmaker in two respects, it is the first hotel to be built in Philadelphia in over a quarter-century, as well as the city's first structure to be erected with high-strength bolts.

Centrally located in the mid-city Penn Center development, the 22-story Sheraton will provide 1,000 guest rooms. One floor, the twenty-first, will be entirely given over to balconied luxury suites. Public rooms will occupy the three lower floors. Parking for guests' automobiles will be handled in an 800-car garage just across Pennsylvania Boulevard, and easily reached by an underground concourse. Also on the concourse level is a bus terminal and retail shops. Owner of the hotel is the Sheraton Corporation of America.

Bethlehem fabricated and erected 3,900 tons of steel for the hotel's framework. Erection was speeded by the use of about 87,000 high-strength structural bolts, authorized by a recent amendment to the local building code.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

In "Record Houses of 1956," Architectural Record's bonus mid-May issue, you will find a striking demonstration of how typical "client-families" are benefiting from:

"ARCHITECTURE

George Bain Cummings, president, The American Institute of Architects, says, "This bonus issue might well have been entitled 'Architecture for the Good Life,' the theme of the 1956 convention of The American Institute of Architects. It so well illustrates our facet of that theme.

"We are delighted that *Architectural Record* is publishing this practical demonstration of the architect's professional usefulness in the home field. Here in this handsome and helpful edition the public may observe real evidence of easier, healthier, safer and more enjoyable living through architecture."

RECORD HOUSES OF 1956 will feature **4** major editorial sections:

1.

The American House. One house, selected by Record editors as a superb example of today's architectural design for a representative American family, becomes the scene of *the most complete editorial trip ever made through an American House as it is actually lived in.*

"FOR THE GOOD LIFE"

2. **Twenty Architect-Designed Houses for Typical American Families.** A ninety-page, highly visual presentation of America's best new houses. Text covers the client's requirements, the architect's reasons for designing as he did, and an appraisal of the architect's work by the owner. Each house will be presented for easy comparison with all others in terms of design solutions to similar problems.

Criteria for the selection of featured houses include: (1) economical design in the $20–$50,000 price range, (2) three or four bedrooms, (3) facilities for growing children, (4) widespread geographical distribution, (5) functional excellence, (6) beauty of form, texture and color, (7) average sites, (8) design by 20 different architects — with full recognition of great new design talent along with the best known including . . .

Anshen & Allen; Bolton & Barnstone; Marcel Breuer; Curtis & Davis; Ulrich J. Franzen; Charles M. Goodman; John MacL. Johansen; A. Quincy Jones and Frederick E. Emmons; Allen & Edwin Kramer; Richard Neutra; Nims & Brown; John Pekruhn; Paul Rudolph; Schweikher & Elting; Smith & Williams; James Speyer; Paul Thiry; William Wiener; E. H. and M. K. Hunter; Wurster, Bernardi & Emmons.

3. **Nine Adventuresome Houses.** Examples of brilliant experimentation in design and the use of materials and equipment — pointing the direction to tomorrow.

In all, twenty-nine houses that will be a valuable tool for you to use with your clients to open their eyes (and minds) to good architectural design and to win their acceptance for house plans in which you can both take pride.

4. **Products and Literature.** A comprehensive round-up of *new* residential building products *plus* a listing of latest manufacturers' literature.

. . . . . .

Shortly after publication "Record Houses of 1956" will be available to the house building public in bookstores across the nation. For the first time it will give this public a truly embracive picture of the best in house design. "Record Houses of 1956" will make a significant contribution to the growing public awareness of the advantages of good house architecture — and the determination of the typical American family to enjoy them.

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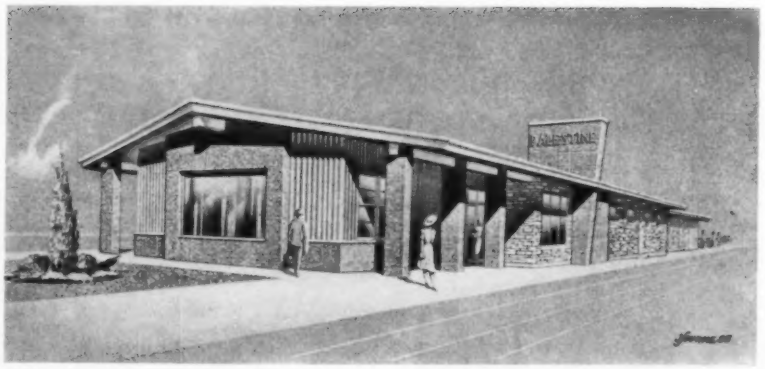
ARCHITECTURAL RECORD

"workbook of the *active* architect and engineer"

(Continued from page 382)

MODERN PASSENGER STATION REPLACES VICTORIAN DEPOT

The Missouri Pacific Lines, which now have under construction a new passenger station at Palestine, Texas, are making thereby the first move in their plan to replace "the rambling, multiple-story type of structure replete with ornate scroll-work decorations" with



New station (above) will replace Missouri Pacific's present station (below), which was erected in 1891

"functional, modern buildings." To permit continued use of the station during construction, the old building will be razed in sections, and will be replaced gradually by the new building.

The interior of the new station, which will be completely air conditioned, will provide, in addition to the waiting rooms, facilities for ticket sellers, clerical staffs of the passenger and freight offices, quarters for the trainmaster, division trainmaster, train dispatchers, telegraph and radio offices, and a room for a switchboard and lockers for trainmen, as well as space for baggage handling, mail storage and the Railway Express Agency.

The exterior of the building will be of Colorado red sandstone, extruded aluminum panels and glass. The interior will be finished with tile and brick, with glass partitions in the waiting rooms; movable metal partitions will divide the offices. The roof will be concrete covered with white marble chips.

The total cost of the building is estimated at $200,000. Full operation of the new station is scheduled for early this year.

The architect is O. L. Hazelwood of Palestine.

(More news on page 390)

Masonic Temple Chose the Enduring Protection of *Karnak Aluminum-Asphalt Coating*

Masonic Temple, Dallas, Texas—The roof was coated with Karnak Aluminum-Asphalt Coating by Wright Waterproofing Co., Dallas

After checking into the various aluminum-asphalt coatings for the roof, this Masonic Temple said:

"We found we could not purchase a better aluminum-asphalt paint than Karnak. Our metal roof was beginning to rust. There were holes which needed to be repaired . . . so we had Wright Waterproofing apply Karnak Aluminum-Asphalt paint and today it looks as good as it did after application eighteen months ago."

Thank you, we say to the Masonic Temple for their kind words. They probably have noted one other result of the application — Karnak cools as it protects. The aluminum flakes flow to the surface of the asphalt, flatten and form an opaque reflective shield that reduces under-roof temperature as much as 15°.

Perhaps you too can use this low cost enduring protection . . .
Lewis Asphalt Engineering Corp., 30 Church St., New York 7, N. Y. Dept. 112.

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Karnak®

Use Other Fine Karnak Products
Membrane Waterproofing Fabric Asphalt Roof Coatings and Cements Calking compounds • Asphalt Emulsions • Tile Cement • Asphalt Paint Wood Block Mastic Joint Filler.

Recent Schieber installation: Bristol Primary School, Webster Groves, Mo. Architects: Hellmuth, Yamasaki & Leinweber, St. Louis.

SCHIEBER 1931 25 1950 FOLDING TABLES BENCHES

We'll Venture A Guess!

Still in daily use! The first Schieber installation, made 25 years ago in Oliver Wendell Holmes School, Detroit, Mich. Architects: Malcomson, Fowler & Hammond, Inc., Detroit.

Looking into the future — in 1981 the schools we are now building may appear as obsolete as those built 25 years ago seem today. We'll venture a guess, though; The multi-purpose room, the Schieber equipped combined lunch room — activities area, will be even more universally used. Thousands of Schieber installations have already been made and Schieber's strong, rugged construction and sound engineering have proved the design principle to be practical. Write for our architects file.

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PORT-A-FOLD
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Representatives in all areas—U. S. & Canada

A NEW SCHIEBER PRODUCT

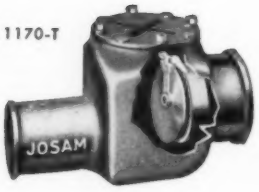
Complete new concept. Honeycomb core reduces weight to ½. No floor tracks or guides, yet positive floor seal. New surface resists mars, scratches, vandalism. Electric-hydraulic operation.

SCHIEBER-HAWS FOLDING PARTITIONS

THIS PROTECTION *Every* BUILDING NEEDS

Josam BACKWATER CONTROLS

Series 850-V



Series 1170-T

Series 680-V

Series 6040-V

Series 810-V

Series 210-V

Series 380-J

Every building connected to a sewer line is subject to the danger of backwater.

When water from a sewer backs up as a result of excessive rains, thaws, floods or inadequate carry-off, it backs up into basements with destructive force. Equipment and merchandise becomes water soaked . . . foundations and floors undermined . . . unsanitary sediment and debris spread filth over the entire basement.

The loss, damage and repairs caused by the water backing up from sewers and drains cannot adequately be covered by insurance. That's why proper safeguards against backwater are absolutely necessary.

Positive protection against backwater is easy to provide and the cost is so small compared with the backwater damage, that no residence or building should be without it. For this purpose Josam offers a wide range of backwater controls, tested and proved in every type of building. The mechanism in Josam backwater controls permit, speedy drainage from the building but closes instantly at the slightest backflow . . . keeps backwater out. Send coupon below for full information today!

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Dept. AR • Michigan City, Indiana
Please send manual on BACKWATER CONTROL.

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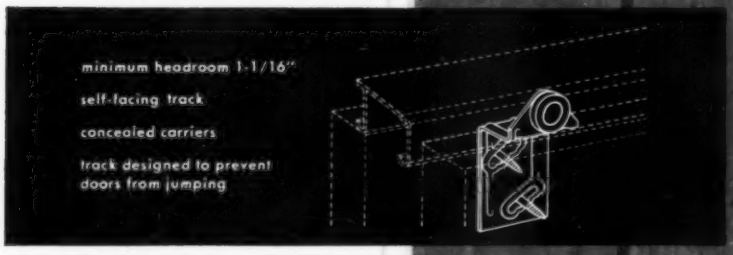
Grant rocket
sliding door hardware

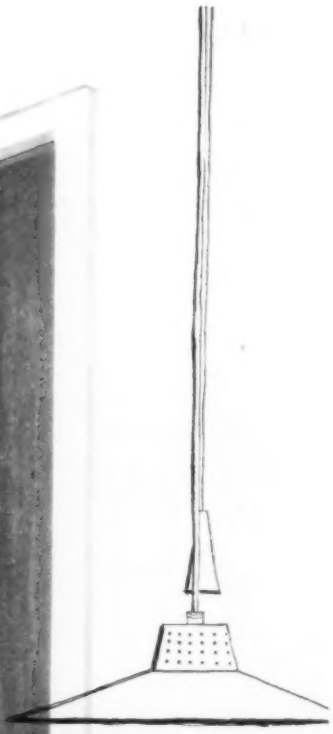
assures low installed cost and smooth, perfect action

Unique design allowing pre-attachment of carriers to doors, cuts installation time to a minimum. Grant experienced engineering gives you positive assurance of smooth, quiet action and durability. All metal parts are rust resistant... carrier wheels are self-lubricating nylon. Complete sets of parts needed for installation come to the job site packaged in sturdy, sealed tubes.

108 Pages of Important Data.
Get your copy of Grant's catalog. Full data on all sliding hardware needed in construction. Free, of course.



Check plans for sliding-door luxury touches that sell houses



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(Continued from page 386)

MANILA ACQUIRES A NEW MOTION PICTURE THEATER

Disliking the common practice of affixing an independently designed identification to the front of a movie theater, architects Juan F. Nakpil & Sons of Manila essayed the integration of the two in their design for the Ever Theater in Manila. By curving the façade, rather like peeling back a section of it, they got the projection they needed for the sign. The façade itself is striped with white marble and black "marbrite."

The cantilevered staircase in the lobby (below) of the Ever Theater dominates the entrance area; it is reflected in the mirrored wall

The auditorium, which seats 1300, was designed with special attention, the architects report, to film techniques and especially to the wide CinemaScope screen. Rather than frame the screen, they made it appear to stand in space. To increase the illusion of space around the screen, the ceiling and part of the walls were painted dark blue. The walls of the auditorium were treated with acoustic plaster and covered with a "fence" of wood rails to control the sound.

The colors in the lobby, which focuses on the white terrazo stairway leading to the balcony, are black, gray, and varnished wood, with small accents on the doors and ticket booths of red, yellow and blue. Posters are mounted on free-standing stainless steel rods.

(More news on page 394)

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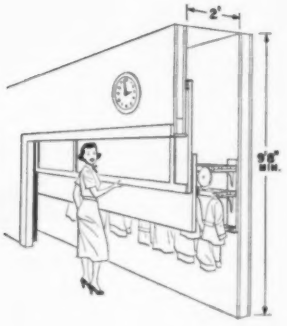
Built-in wardrobe behind chalkboard



Wardrobe behind chalkboard is reached by easy upward movement of 2-section Barcol WARDROBEdoor. Full-view opening gives teacher control of "cloakroom rush." Provides more working wall space for chalkboard or tackboard, more usable floor space clear of pivots and hinges. Advertised to school officials. Call your Barcol distributor (under "Doors" in phone book) or write

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... all types of conditioned air equipment under one roof! Barber-Colman met these challenges with simpler, faster, more flexible automatic controls.

New Shelbyville Road Plaza Shopping Center, near Louisville, Kentucky

General contractors: Dahlem Construction Company, Louisville
Air Conditioning contractors: The Stewart Distributing Company, Louisville

The new Shelbyville Road Plaza, just out of Louisville, is typical of the fast nationwide trend towards modern merchandising centers. Just as typical is the trend towards electric-electronic control of heating and air conditioning. With electricity, you get instantaneous action, and true positive positioning control. Join the trend to "better control . . . electrically."

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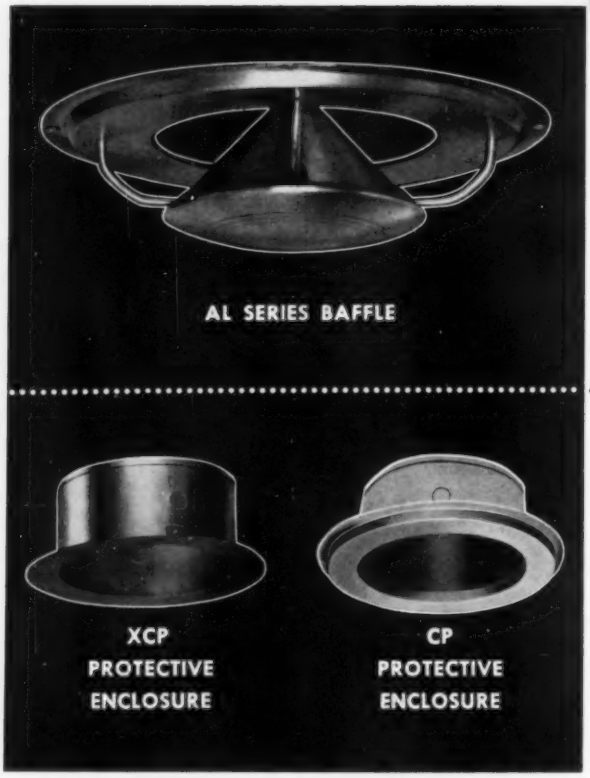

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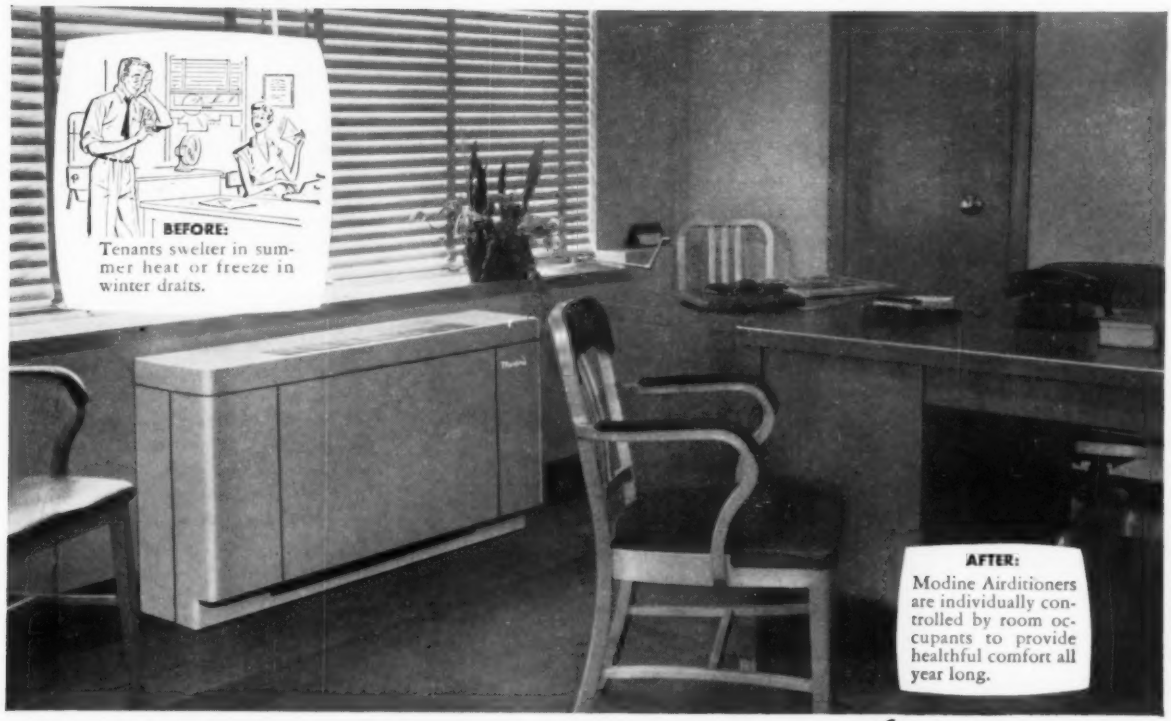
Representation

Air conditioning existing buildings may be easier than you think...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Tenants swelter in summer heat or freeze in winter drafts.
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Modine Airditioners are individually controlled by room occupants to provide healthful comfort all year long.

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1. Individual units replace radiators in each room to be air conditioned. Hot water from your present boiler is piped to each unit for heating. Cold water from a central chiller is supplied through the same piping for summer cooling. A small motor (1/30 to 1/12 hp) operates two quiet fans in each AIRditioner to provide refreshingly cooled or heated air circulation. There are no expensive ducts to install. Here is low-cost, year-round comfort for new or existing office and apartment buildings, hotels or motels, hospitals or homes.

2. Operating flexibility cuts costs. With Modine AIRditioners, room occupants control their own temperatures. Units are operated only when and where they are needed. No need to air condition an entire building to provide comfort only in occupied rooms.

3. Types and sizes for every application. AIRditioners are offered in console (illustrated), concealed, built-in overhead and exposed ceiling models . . . in sizes to meet your remodeling or new construction requirements. All units are furnished with quiet, slow-speed motors (1050 rpm top speed) having built-in thermal overload protection as a standard safety feature.

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A-1283

(Continued from page 390)

QUEENS COLLEGE TO BUILD SPEECH AND MUSIC CENTER

Planned for the use of speech and music students at Queens College and of the New York borough's citizens, the Music and Arts Building will have separate but related facilities for both departments.

The music auditorium, which will seat about 2200, will have a simple concert platform backed by a fixed cyclorama, with facilities, in a small way, for opera and ballet presentations.

The theater, which will seat about 500 spectators, will have a more elaborate stage. A cantilevered balcony around the audience room, connected by short stairs to the stage, can also be used in performances. The forestages in both cases will be demountable to accommodate orchestra pits. The backstage areas of the auditorium and the theater will be mutually accessible.

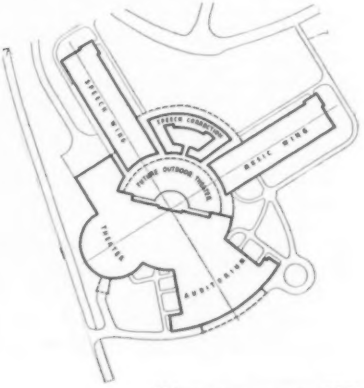
In addition to these indoor facilities, the building will contain an outdoor theater. This stage can be reached from both the auditorium and the theater.

Each of the departments will have its own classroom wing; the stages and backstages will also serve as classrooms, and some of the classrooms will be usable as dressing rooms.

A speech correction unit will be located between the two classroom wings.

The exterior of the building will be finished with light gray brick, in agreement with existing buildings on the campus. Bright colors will accent the concrete soffits and the doors and windows.

The architects for the building are the New York firm of Fellheimer and Wagner, with Henry W. Vikung the designer in charge.



(More news on page 398)

Pratt & Lambert PRIMAFIL for Cinderblock Walls

Unretouched photo shows how just one coat of Pratt & Lambert PRIMAFIL on cinderblock has filled voids and produced a smooth, hard foundation for finishing.

CAN BE BRUSHED, ROLLED OR SPRAYED. Pratt & Lambert PRIMAFIL is the most successful, most versatile product yet offered for simultaneous priming and filling cinder and other coarse aggregate interior block walls. It goes on with exceptional ease by brush, roller or spray. It fills voids to any desired degree, coats sharp edges, hides well, dries rapidly and seals perfectly. It uniformly holds out the finish; either Pratt & Lambert New Lyt-All Flowing Flat, Lyt-All Stippling Eggshell or Cellu-Tone Satin.

For additional interesting facts about Pratt & Lambert PRIMAFIL, write to Pratt & Lambert-Inc., 75 Tonawanda Street, Buffalo 7, New York. In Canada: 254 Courtwright Street, Fort Erie, Ontario.

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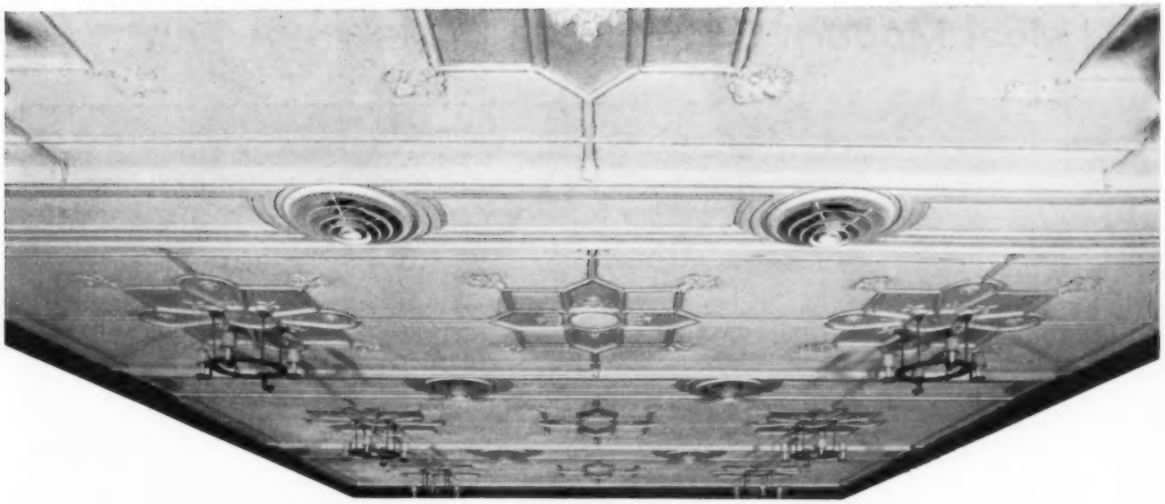
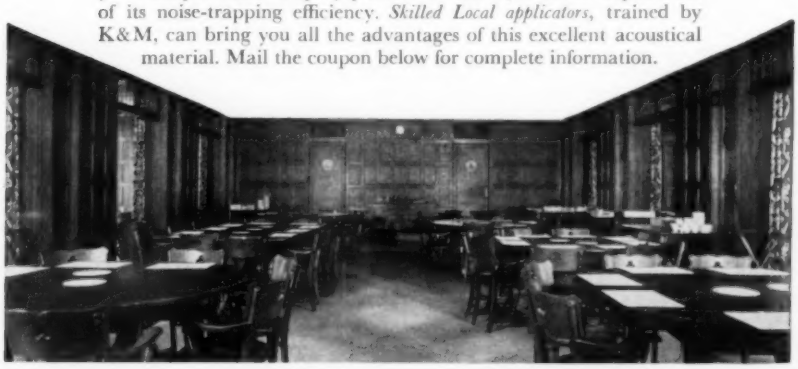


Sprayed "Limpet" Asbestos on the ceiling of the main dining room of the Engineers' Club in Dayton, Ohio, provides a quiet atmosphere for dining. This job, applied over ten years ago, also affords thermal insulation, fire protection, and prevents condensation. *Architects:* Schenck & Williams, Dayton, Ohio. *Applicator:* Myron Cornish Company, Incorporated, Dayton, Ohio.

Keeps the ceiling design, gets rid of noise... Sprayed "Limpet"® Asbestos

SOUND CONDITIONING A CEILING that has many curves and recesses presents a problem for most acoustical materials. However, Sprayed "Limpet" Asbestos, while doing an excellent job in controlling sound, retains every design feature of a ceiling. The evenly textured, seamless blanket of asbestos fibers adheres to any clean ceiling surface, regardless of its shape or composition. It does a superior job in deadening sound waves and in preventing the passage of heat.

Sprayed on, "Limpet" Asbestos needs no nailing, clipping, cutting. Special furring strips or other mechanical fastening devices are not required. There's no need to mask or disturb plaster mouldings. The natural color of the finished job blends with most color schemes—yet "Limpet" can be spray-painted if desired, with no impairment of its noise-trapping efficiency. *Skilled Local applicators*, trained by K&M, can bring you all the advantages of this excellent acoustical material. Mail the coupon below for complete information.



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"Most Modern Structure in Tri-State Area"...

Interior of Guaranty National Bank, Huntington, W.Va. • Certain-teed Plasters were used here exclusively. • Architect: Bank Building and Equipment Corp. of America, St. Louis, Mo. • General Contractor: C. H. Jimison & Sons, Huntington, W.Va. • Plastering Contractor: J. C. Hicks, Huntington, W.Va. • Supplier: Carolina Lumber Company, Huntington, W.Va.

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Better Working Plaster... Gives Me More Yardage

—says plastering contractor

Called the "most modern structure in the Tri-State area of West Virginia, Ohio and Kentucky," the Guaranty National of Huntington is a handsome example of modern bank design.

All interior plastering was done with Certain-teed materials: Certain-teed Fibered Plaster, Satin Spar Gauging Plaster, Sunflower Moulding Plaster.

Mr. Hicks, plastering contractor, and a member of C.P.I.A., says:

"I've tried them all, and I think Certain-teed is best. Certain-teed is more uniform, bag after bag. It is a better working plaster, it's easier to mix and it gives me more yardage. I stick with Certain-teed because I find I do a much better job with it."

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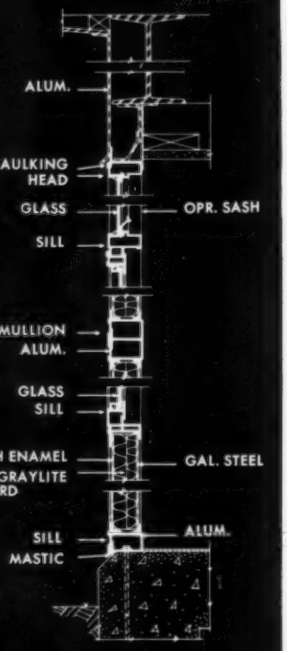

Hodges Manor School—
Norfolk County, Virginia
Walford & Wright—Architects
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Once more a leading architectural firm designed a new school installation around Brown & Grist Window Walls.

This makes the 49th new school in a year that has gone up in record time using Brown & Grist Window Walls.

In each case, the architects gave the same reasons for choosing Brown & Grist: *Low installation cost*—below that of masonry walls. *Low maintenance*—practically none at all. *Superior Quality*—beauty, light weight, high strength. *Adaptability*—freedom of design and materials.

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See Sweet's Vol. 17 a/Br and 3 a/Br

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THE RECORD REPORTS
WASHINGTON TOPICS

(Continued from page 48)

FHA will secure the necessary tests and evaluation.

"These tests, however, will be performed by existing private and government laboratories outside FHA. FHA itself will do no testing. Again, FHA will have to improve its facilities for prompt evaluation of the results and prompt issuance of standards which the industry can follow."

After taking this long look at itself, FHA asked for $350,000 for fiscal 1957, $300,000 of it to go for the purposes specifically outlined by Commissioner Mason, and $50,000 for administration burdens occasioned by such an improvement of the agency's "facilities to evaluate the results and issue standards promptly." Personnel within FHA's own administration would be used to carry out these functions.

At this writing the House Appropriations Committee had recommended a two per cent reduction in FHA's overall requests. If this were to stand for the coming fiscal year and be prorated through the various agency programs, the proposed improvement in the handling of testing and standards would not be severely impaired.

MODULAR USE ENCOURAGED BY DEFENSE DEPARTMENT

Modular Measure was given encouragement by the Department of Defense when it suggested that Congress add a provision to the military public works authorization bill applying the principles of the system to public works construction for the services.

The Department already has taken steps on its own initiative to encourage the method where it can. This was revealed by Franklin G. Floete, formerly Assistant Secretary of Defense for Properties and Installations, and now acting head of General Services Administration. The Senate Armed Services committee had queried Defense on the subject, and Mr. Floete's reply brought out that while the Department would not favor rigid application of modular measure for all of its construction, it would go along with amending the $1.8 billion authorization measure for fiscal 1957 work to encourage adoption of the dimensioning system where it could readily be applied.

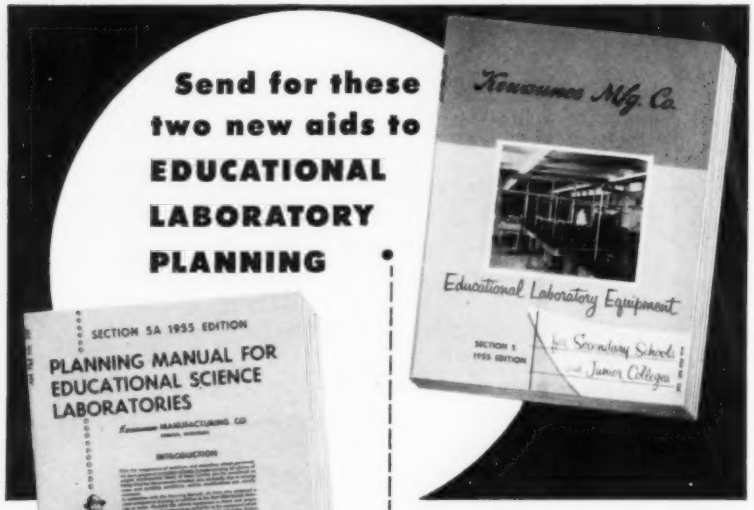
Mr. Floete went further to suggest that such a provision could state that in the design of family housing and other repetitious-type facilities the applicable law could provide that, to the extent possible, the principle of modular design be used "in order that the facility may be built by on-site fabrication or factory fabrication, whichever the bidder elects."

It was estimated by Roger Fulling, director of construction for the Defense Department, that adoption of modular measure could save as much as five per cent of the construction cost in many cases, the saving depending upon the size and type of building.

GRANTS WOULD HELP BUILD MEDICAL, DENTAL SCHOOLS

The President's proposed five-year program of grants to assist in the construction of medical and dental research and teaching facilities could be translated into law through a new bill intro-

(Continued on page 402)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SECTION 5A 1955 EDITION
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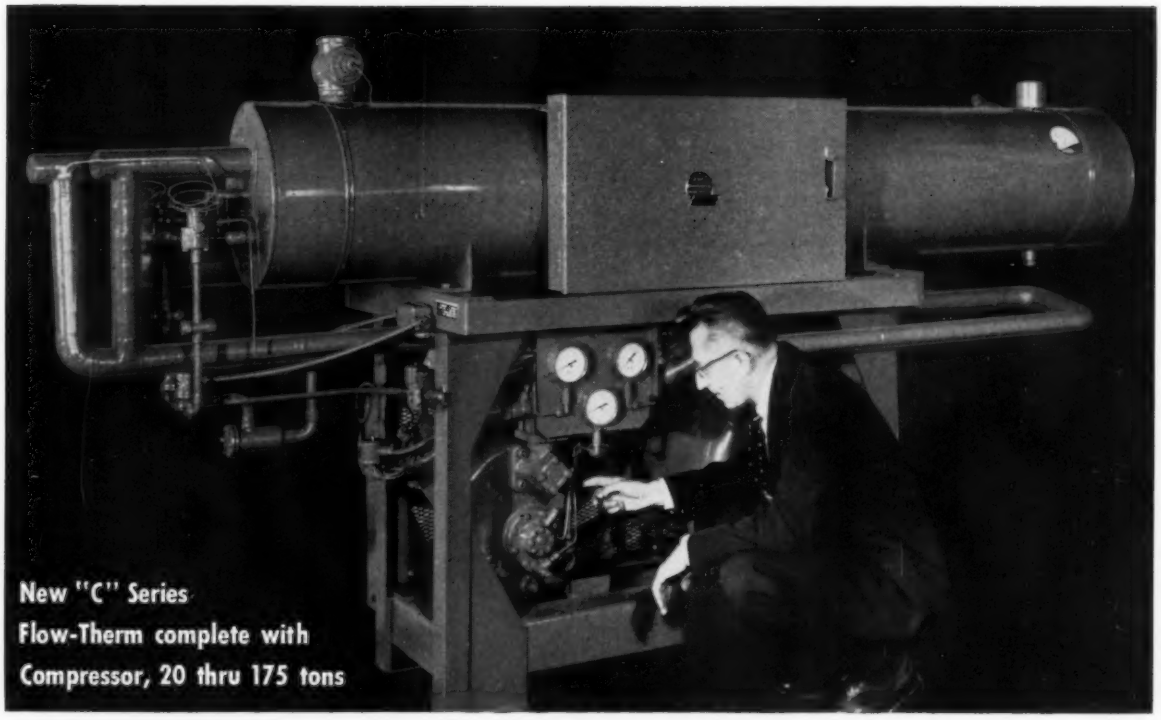

New "C" Series
Flow-Therm complete with
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Here's the new, compact, packaged liquid chiller, complete with compressor, that will add new possibilities to your air conditioning plans . . . Acme's "C" Series FLOW-THERM designed specifically for modern refrigerants. Constructed with proven Acme components, it fits all the requirements of architects, consulting engineers and contractors for large capacity efficiency and easy installation.

A major component of this new "package" is Acme's great, new Dry-Ex®, a smaller, lighter water chiller that packs 25% more capacity in every cubic foot. The reason, a new advancement in refrigerant tubing, is described briefly below. Compressor, condenser and heat exchanger are all selected to give maximum performance in a space-saving, economical unit.

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Heat Pump applications have been successful in a wide range of climates. Factory modifications for heat pump use are simple and inexpensive.

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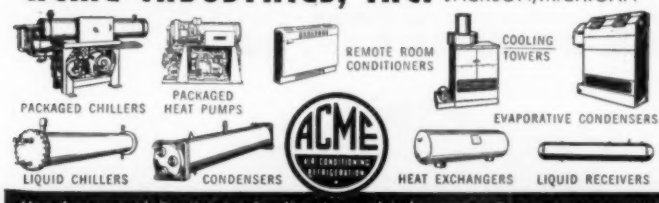

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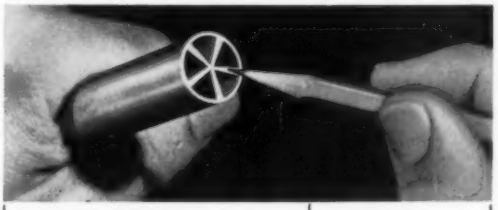
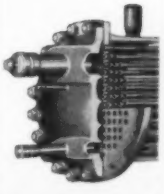
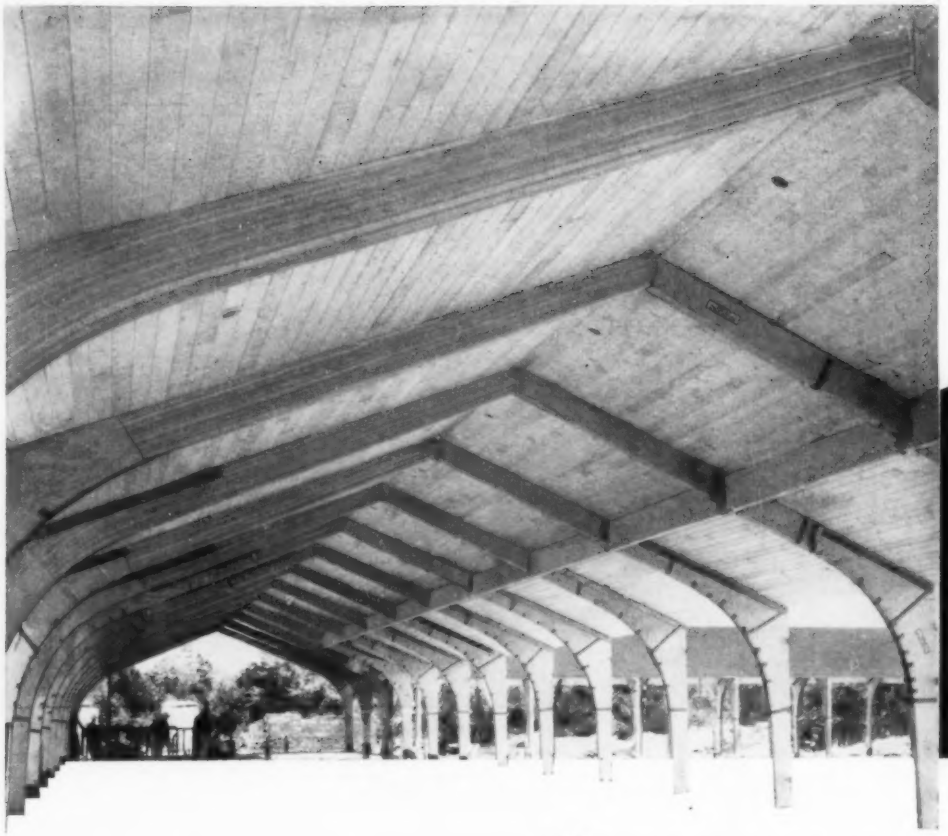


Star feature* of the new Acme Dry-Ex — key component of the "C" Flow-Therm — is a new copper tubing with a star-shaped aluminum insert that doubles the heat transfer surfaces. Tubes extend straight through to multi-pass heads at each end. No bends, no soldered joints — no leaks!



*Patent applied for



Educational Building, Memphis University School, is 32 feet wide, with framing of glulam arches spaced at 12 feet and covered with spruce Tim-Deck. Architects: Windrom, Haglund & Venable, Memphis. General contractor: Allen Brothers Construction Co., Memphis.

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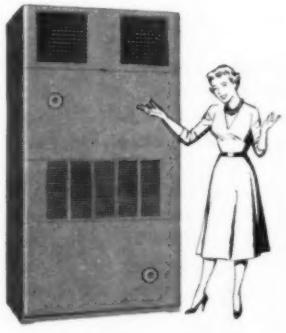
Architect: David S. Castle.
General Contractor: BMFP Construction Co.
Mechanical Contractor: Beals Plumbing and Heating.
Consulting Engineer: Leonard E. Kanto.

With 155,453 sq. ft. of floor space, Great Plains Life Building offers the ultimate in air conditioned comfort for a variety of tenants – including dentists (above, one of several), doctors, oil-exploration offices, a bank, a radio station (below), and a restaurant.

In Texas, even a day's temperature change can be BIG!

Requiring heating in the morning and cooling by midafternoon, Great Plains Life Building depends on American Blower equipment



In addition to equipment for complete central systems – American Blower offers packaged air conditioners for offices, stores, industrial plants, and similar applications.

Heating and cooling on the same day? That's what American Blower air conditioning equipment provides in the new 20-story Great Plains Life Insurance Building, Lubbock, Texas. For, on some days, outdoor temperatures jump from 25° F. in the morning to 82° F. by midafternoon!

Using American Blower multi-zone units, each floor is divided into four air conditioning zones . . . which can be controlled separately to allow individual comfort levels for tenants.

And despite occasional sand storms –lasting from one to three days, with winds up to 70 mph – the indoor atmosphere always remains fresh and clean, for it is filtered, conditioned, and distributed at over 220,000 cu. ft. per min.

Why not investigate American Blower equipment, if air conditioning is in *your* plans? A call to our branch office near you will bring helpful information, and the assistance of American Blower engineers.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of American-Standard

AMERICAN 75th ANNIVERSARY YEAR 1881 - 1956 **BLOWER**

Air conditioning equipment for every business

THE RECORD REPORTS
WASHINGTON TOPICS

(Continued from page 398)

duced a few weeks ago by Senator William A. Purtell (R-Conn.).

The new measure, like the President's proposals, would authorize construction grants of $250 million each year for five years to aid accredited schools of medicine, dentistry, osteopathy, and public health in expanding and improving their research and training facilities. Other private and non-profit institutions engaged in medical or dental research could apply with the grants which would cover up to half the cost of building the facilities.

Federal domination of medical and related education would be avoided through the operation of a proposed 16-man National Advisory Council which would be appointed by the Department of Health, Education, and Welfare. This Council would advise the Surgeon General in important policy matters arising from administration of the program.

3-BEDROOM HOUSE SOLD AT $13,700 WAS 1955 MEDIAN

A recent Bureau of Labor Statistics report indicated that three-bedroom houses accounted for two thirds of the total housing output in 1955. Builders last year concentrated on houses of moderate size and started relatively fewer of the small and very large houses. Moderate sized houses, by BLS standards, have between 1000 and 1500 sq ft of floor area.

Median selling price in 1955 increased 11 per cent to $13,700. The median price of new homes in 1955 varied from less than $12,000 in the South to more than $14,000 in other regions.

The agency pointed out that generally, price differences reflected differing regional patterns in style of architecture and in what home buyers desired. Proportion of new homes with basements varied from 88 per cent in the Northeast to less than 20 per cent in the South. Nationwide, approximately two out of five homes built in 1954 and 1955 had basements. Frame continued to pace masonry by a wide margin, BLS said.

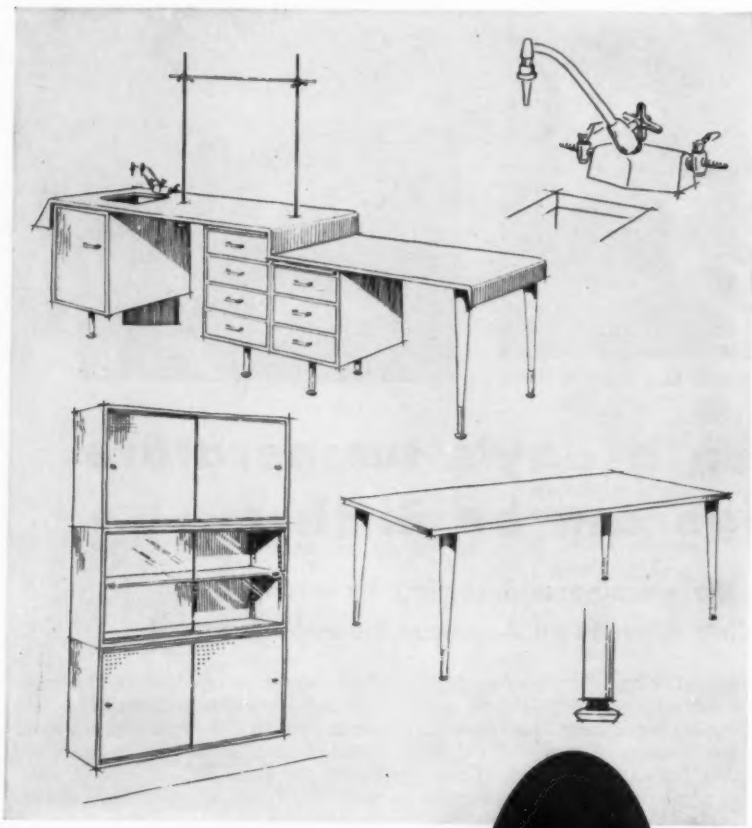
Over the year there was some shift in buyer preference from double-hung windows with wooden frames to various types of aluminum frame windows, although the former continued to be the most popular single type of window. Increased use of horizontal slide, awning and jalousie types reflected current architectural trends in one-family houses.

AIR FORCE STARTS DRIVE ON BUILDING PRACTICES

The Air Force says the time has come for contractors to exercise closer control during construction of airport runways. The Army Corps of Engineers has told general contractors that they must revise their earlier ideas of precision, that unprecedented problems lie ahead in the construction of base facilities required for preparedness. Ordinary commercial practice and standards will no longer do in airport construction, the Engineers are insisting. Smoothness requirements for runway surfaces will be controlled to $\frac{1}{8}$ in. of 10 ft straight edge.

This is the beginning of a new precision trend that can be expected to

(Continued on page 406)



MULTI-LEVEL
LABORATORY FURNITURE BY UNAFLEX

Perimeter planning, multi-level work areas, suspended storage space, apronless work tops and exclusive new plumbing features are all part of the new MULTI-LEVEL Laboratory planning concept by Sjöström of Philadelphia. You may have seen it at the AASA Conference in February. If not, write for the UNAFLEX preview folder C-561.

JOHN E. SJÖSTRÖM COMPANY, INC.
1717 NORTH TENTH STREET • PHILADELPHIA 22, PENNSYLVANIA

ON THE NEWS FRONT WITH STRUCTURAL STEEL

CREEDMORE STATE HOSPITAL — Distressed Patients' Building — *Architect:* Cornelius J. White, New York; *Steel Fabricator and Erector:* Grand Iron Works, New York.

THE hospital buildings shown on this page are in New York City. Above is one of two new buildings for distressed patients, part of Creedmore State Hospital, situated at the intersection of Grand Central Parkway and Cross Island Parkway in Queens. These buildings have frameworks of Bethlehem Structural Shapes. In the Bronx is the 13-story East Bronx General Hospital, shown at right, the brick exterior of which covers a framework fabricated with Bethlehem Structural Shapes.

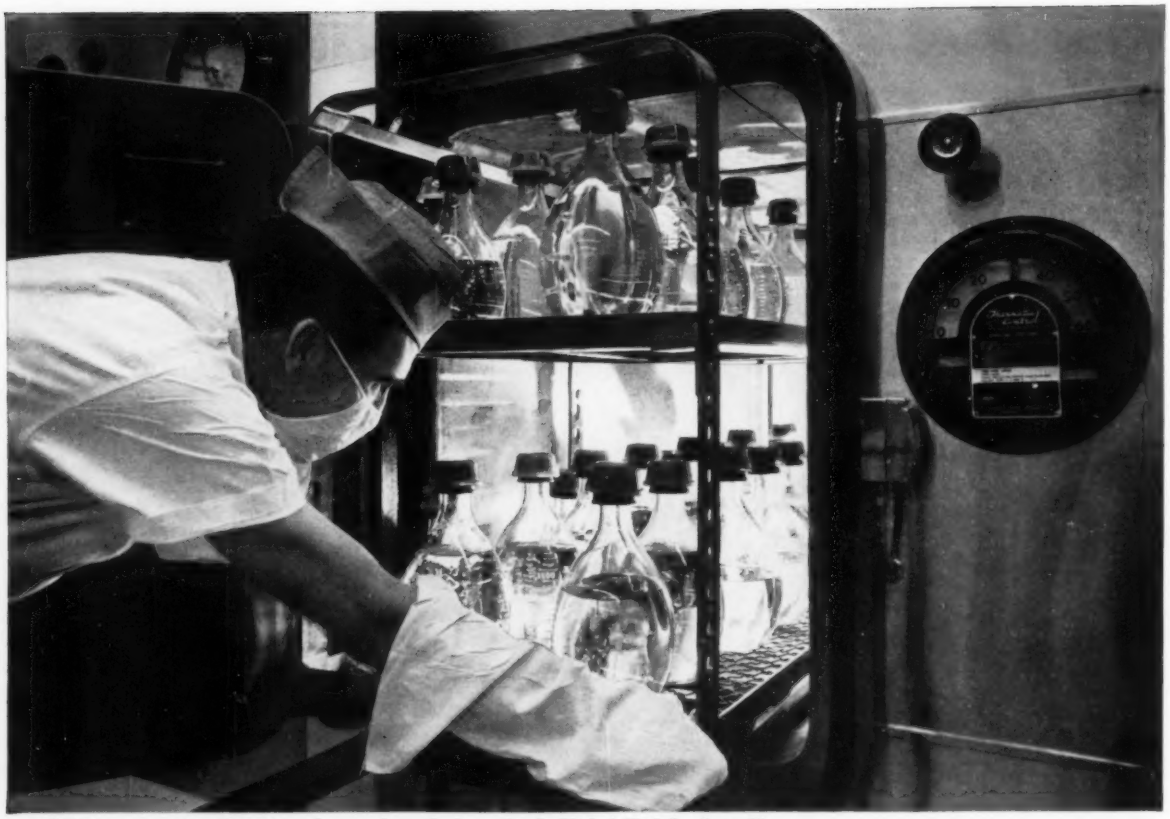
BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor:
Bethlehem Steel Export Corporation

EAST BRONX GENERAL HOSPITAL — *Architect:* Pomerance and Breines; *General Contractor:* Gerace and Castagne, Inc., of New York. *Steel Fabricator:* Harris Structural Steel Co., New York.

BETHLEHEM STEEL

BETHLEHEM STEEL



Solutions emerge glistening clear and sterile from Castle Nickel-Clad Steel sterilizer.

"Build in a sterilizing set-up that's easy-to-use, easy-to-maintain,"

...said the building committee for the new, 800-bed Montreal General Hospital

Castle's planning service came up with the answer . . . based on Nickel-Clad Steel and Monel* nickel-copper alloy sterilizing equipment.

Easy-to-use. Well-planned layout of sterilizing facilities and automatic control features in the Castle units save time...effort. Make it easier to achieve more uniform sterile technique, too.

And how easy to clean the units. Just wipe with damp cloth. Dried deposits come right off with scouring powder.

Commercial cleansers won't hurt a Monel surface. In fact, *hardly anything* harms Monel nickel-copper alloy. Surfaces stay smooth . . . seldom scratch or dent. True of Nickel, too.

Easy-to-maintain. Monel-walled sterilizers resist corrosion. Monel alloy often serves twenty to thirty years with very little care.

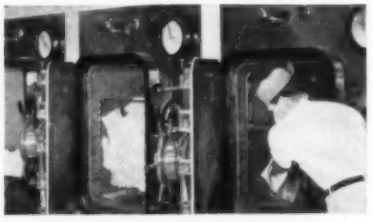
Castle puts Monel alloy in both walls of their cylindrical units, and in the end rings. All welded into one. No rivets to work loose causing leakage.

You should hear the nice things nurses at Montreal General say about the auxiliary equipment made with Monel nickel-copper alloy . . . racks, trays, operating-room equipment.

Are you building a new hospital . . . or renovating? Write Wilmot Castle Co., Rochester 2, New York. Or call their local office. Their planning service will be glad to help you, too.

*Monel is a registered trademark of the International Nickel Company, Inc. applied to nickel-copper alloys produced and marketed by it.

The International Nickel Company, Inc.
67 Wall Street New York 5, N. Y.

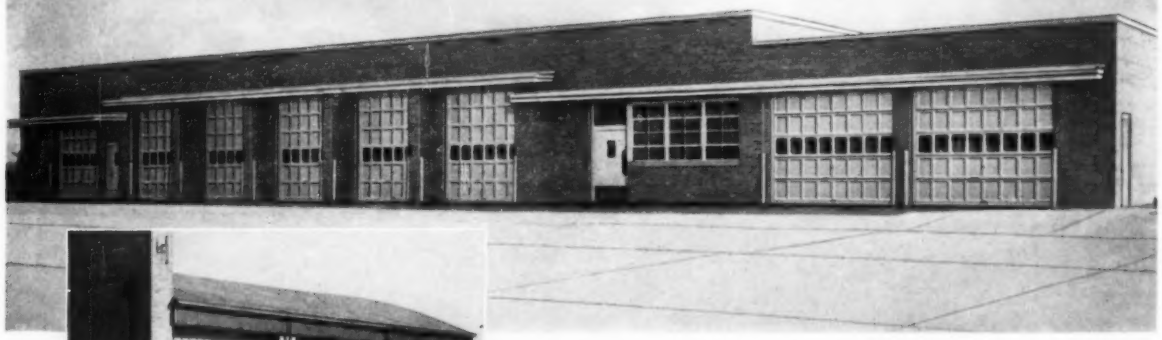


Lasting efficiency assured. Thanks to Monel nickel-copper alloy and Lukens Nickel-Clad Steel, personnel at Montreal General should have an easier time of it for years. In Central Sterile Supply, sterilizer cleaning is no big chore. Packs are less apt to be stained. Equipment shines. "Engineering" benefits, too, when so little need be done to maintain the equipment.

INCO TRADE MARK Nickel Alloys

Nickel-Clad and Monel sterilizers... *easy to care for*

Ro-WAY Commercial Doors now available with MASONITE® DORLUX® PANELS



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No extra cost · Lifetime guarantee

Ro-Way commercial and industrial doors have always been noted for outstanding quality in design, materials, construction and performance.

Now Ro-Way adds another fine feature—Masonite Dorlux panels. Optionally available on any custom-built commercial model, Dorlux panels offer many advantages:

- **A dense, grainless material with a strong, 2-ply finished thickness of ¼"**
- **Impact strength equivalent to or in excess of ¼" plywood**
- **Effectively resists knocks, bumps and other hazards**
- **Written guarantee not to split, splinter, crack or delaminate**
- **Maintains dimensional stability under all weather conditions**
- **Smooth surface takes and holds paint beautifully to look new longer**

One more good reason to specify Ro-Way—for *all* your commercial and industrial overhead type door applications.

ROWE MANUFACTURING CO., 1270 Holton St., Galesburg, Ill.

SEE OUR CATALOG IN SWEET'S

Nationwide sales and installation service. See your classified telephone directory for nearest Ro-Way distributor.

Rō-Way
OVERHEAD TYPE DOORS

*MASONITE CORPORATION

EXTERIOR GRADE DORLUX® PANEL

Lifetime Guarantee

The panels of this door are Exterior Grade Dorlux, a product of Masonite Corporation. Dorlux is a wood product selected by the manufacturer of this door to give you the best in quality, beauty, and service. These panels are guaranteed not to split, splinter, delaminate or crack due to any natural conditions of weathering. If a Dorlux panel fails in any of these ways, notify Masonite Corporation, giving conditions of failure and name of door manufacturer. After verification of the failure, Masonite Corporation will furnish a new door section or an entire new door, depending on the circumstances, at its expense.

ROWE MANUFACTURING CO.
GALESBURG, ILLINOIS

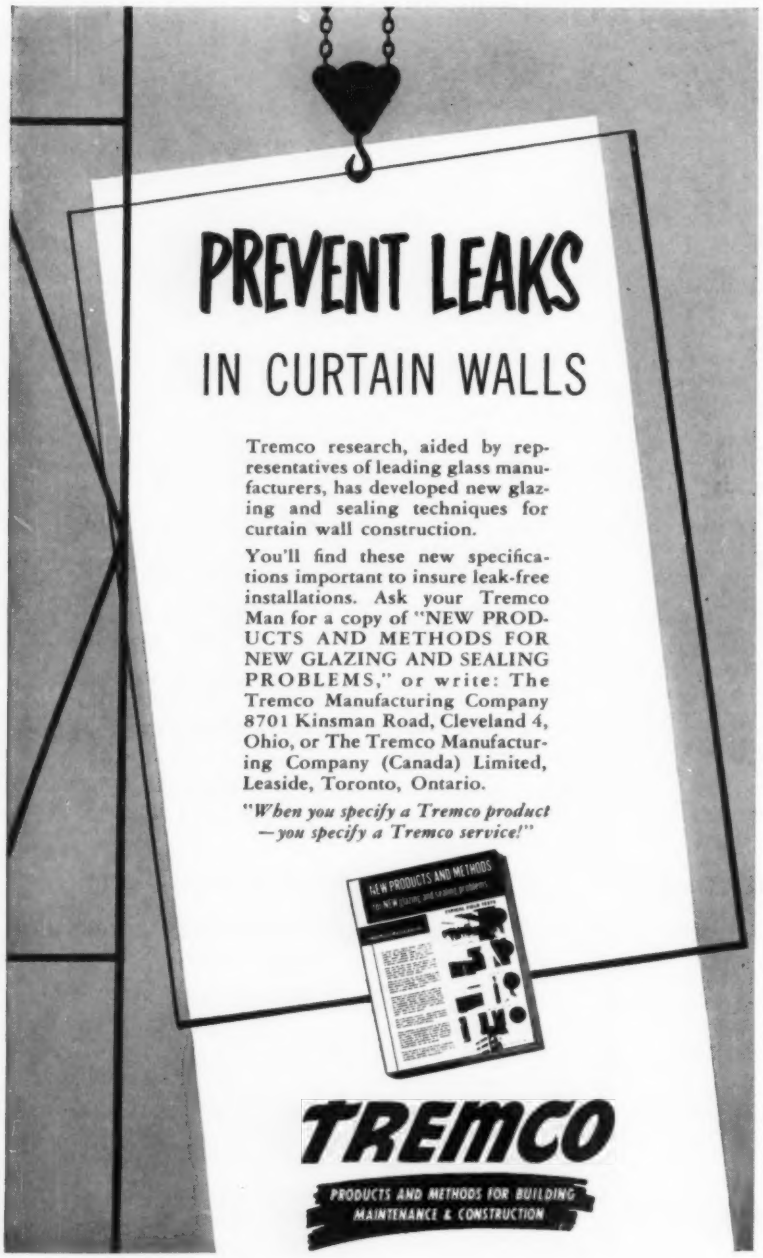
THE RECORD REPORTS
WASHINGTON TOPICS

(Continued from page 402)

extend to much of the military construction activity.

Closer tolerances are required, for one thing, because of the design of new aircraft where the crew sits far forward of the landing gear. On "hot" landings in such craft, the vibrations from surface unevenness are multiplied. A rocking motion can be set up at a time when the pilot needs maximum control. The establishment of longitudinal and transverse gradients for finished gradients for finished pavements is not felt to be alone sufficient. Closer control will have to be exercised during construction, the Corps said.

Furthermore, the Air Force has adopted a policy of building all primary-use areas involving combat aircraft of Portland cement, rather than flexible-type pavement. One spokesman said that from now on, the Air Force will be building in Portland cement concrete in general with slabs 20 in. thick or thicker.


PREVENT LEAKS
IN CURTAIN WALLS
Tremco research, aided by representatives of leading glass manufacturers, has developed new glazing and sealing techniques for curtain wall construction.
You'll find these new specifications important to insure leak-free installations. Ask your Tremco Man for a copy of "NEW PRODUCTS AND METHODS FOR NEW GLAZING AND SEALING PROBLEMS," or write: The Tremco Manufacturing Company 8701 Kinsman Road, Cleveland 4, Ohio, or The Tremco Manufacturing Company (Canada) Limited, Leaside, Toronto, Ontario.
"When you specify a Tremco product —you specify a Tremco service!"
NEW PRODUCTS AND METHODS
TREMCO
PRODUCTS AND METHODS FOR BUILDING MAINTENANCE & CONSTRUCTION

PUBLIC WORKS PROGRAM IN 1957 PUT AT $3.9 BILLION

The Council of State Chambers of Commerce, after analyzing the Administration's budget for fiscal 1957, said some $3.9 billion would be required in appropriations to build the military construction and the civil works projects proposed.

Estimated cost of new civil and military public works to be undertaken by the Federal government directly was placed at $87 million. Expenditures tagged by the Council also included $1.7 billion to complete military public works, and $1.5 billion to complete five Bureau of Reclamation projects, with only $8.6 million to be spent on these in the coming fiscal period. Other items: $110 million for two Corps of Engineer projects, a maximum bond issue of $750 million for the Tennessee Valley Authority expansion program, and $144 million total cost for new Atomic Energy Commission facilities.

Said the Council's report: "The average annual cost of construction of all the proposed new public works programs after 1957 will be $846 million as compared to an $87 million expenditure estimate for 1957. This $846 million annual cost estimate was obtained by dividing the cost to complete each project after 1957 by the indicated number of years to complete each one."

On top of the above is the Federal aid highway program which, if enacted, would cost another $31 billion to complete, an average of $3.1 billion each year for 10 years. Proposed Federal aid for school construction was put down for $150 million in fiscal 1957 and $2 billion more over five years.

SMALL TOWNS ARE SEEN AS FUTURE HOUSING BULWARK

The less populous areas of this country may become a strong sustaining force for the home construction industry in the future, Arthur W. Viner, executive secretary of the national committee, Voluntary Home Mortgage Credit Program, told Congress.

Many of the nation's lenders, coming into small communities for the first time, have had their eyes opened to the advantages of small town lending, Mr.

(Continued on page 410)

Suntile at work...

"This Airline Terminal Floor Paid for Itself in One Year"

Here's what Byron Dickey, Manager of Greater Cincinnati Airport, says about his modernization of the terminal floor with ceramic Suntile—

"We installed Suntile two years ago, applying it with adhesive right over the existing synthetic tile floor.

"Even though approximately 3 million people pass through the terminal each year, this floor shows no signs of wear. And it saves so much in cleaning costs that it paid for itself in one year. We save on labor, wax, stripper, and buffing equipment.

"Also, there hasn't been one reported accident from slipping since Suntile was installed. Before, accidental falls were numerous."

When you want *both* style and practicality for floors and walls—call your Suntile dealer . . . You'll like the functionally balanced Suntile colors . . . And for special designs in Suntile, the services of our staff of trained ceramic artists are always available to you at no cost.

New Catalog shows colors, shapes, new installations, full specification data. For your free copy, address Dept. AR-46.

THE CAMBRIDGE TILE MFG. CO.

P.O. Box 71, Cincinnati 15, Ohio

WASHINGTON TOPICS

(Continued from page 406)

Viner said. This type of mortgaging could be an important prop in future years when metropolitan housing markets may be near saturation, he suggested. There has been a sound and steady growth of population in many smaller towns as a result of industrial and commercial growth, and small town borrowers are noted for a tradition of debt payment and attachment to their homes.

The VHMCP is a government-sponsored clearinghouse for housing loans established to make it easier for prospective borrowers in small communities to get mortgage money. Its prime function is to bring borrower and lender together.

PRESIDENT CREATES JOB OF AVIATION FACILITIES AIDE

Edward P. Curtis of Rochester, N. Y. has been installed as special assistant to President Eisenhower for aviation facilities planning.

This is a new position which involves a long-range study of the nation's requirements. Comprehensive in scope, the President's plans for the office include development of methods for meeting the needs disclosed by such a survey and the preparation of any legislative, organizational, administrative and budgetary recommendations needed to carry out the final plan.

Mr. Curtis will be confronted with new demands placed on existing airports throughout the country by the advancing jet age. Both military and civil aviation interests have had these much under study recently.

DISPERSAL RULE MODIFIED IN FEDERAL CONSTRUCTION

Federal agency heads concerned with new building projects now can consider designing protective features into their structures to compensate for lack of distance from potential H-bomb target centers.

The policy on this was cleared up earlier this year in testimony before House Appropriations subcommittees. An Office of Defense Mobilization directive now permits the consideration of economic operation and administration as well as dispersal in the location of new Federal buildings.

There had been confusion on the point prior to the testimony, some agencies considering they were bound conclusively by ODM's more stringent dispersal rules.

The new flexibility allows those charged with planning new Federal structures to locate within prescribed target areas if protective features are designed into the buildings.

Such steps now will be taken in preparing plans for new housing for the Geological Survey and the Weather Bureau of the Coast and Geodetic Survey, it was said. Both structures are to be placed on the periphery of the Washington, D. C. area. The Geological Survey project was held up nearly a year, one official said, because of ODM's alleged uncertainty regarding dispersal requirements. Since it was a lease-purchase project, it could not receive Budget Bureau approval until the ODM

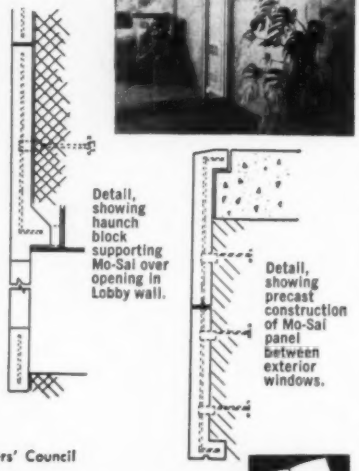
(Continued on page 414)

• Virginia Mutual Insurance Company, Richmond, Virginia
Architect: Ballou & Justice, Richmond, Virginia
Mo-Sai by Economy Cast Stone Company, Richmond, Virginia

The use of Mo-Sai Precast Facing for both exterior and interior wall surfaces is illustrated in the new Virginia Mutual Insurance Company home offices. Snow white Mo-Sai covers the entire tower and window surrounds, and a warm green Mo-Sai faces the Reception Lobby walls.

The flexibility of Mo-Sai, which is a precast, factory controlled combination of carefully selected quartz or granite aggregate, portland cement, and galvanized steel mesh, provides a freedom of expression unique in architectural design. Consider Mo-Sai when facing your next job!

There is a Mo-Sai Associate Manufacturer near you! Contact him for details, specifications, and samples of this modern, economical facing material.


Detail, showing haunch block supporting Mo-Sai over opening in Lobby wall.
Detail, showing precast construction of Mo-Sai panel between exterior windows.

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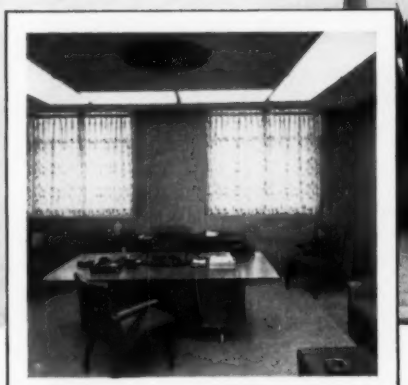
SWEET'S FILE 4d/Mos



Section of the executive offices White Motor Co., Cleveland, Ohio. Architect, Dalton-Dalton & Associates. Contracting electrical engineer, Anton Eichmuller. Electrical contractor, Hatfield Electric. "Lucite" extruded by The Southern Plastics Co., Columbia, South Carolina. Recessed luminaires by The Wakefield Co., Vermilion, Ohio.

Better looking, better lighting

with diffusing panels of Du Pont LUCITE®

The new offices of the White Motor Company in Cleveland have been designed to combine high functional efficiency with unusual attractiveness. As far as lighting is concerned, diffusing panels of "Lucite" play an important role in this "dual-purpose" design.

Diffusing panels of extruded "Lucite" acrylic resin transmit optimum light without specular glare or shadow. They are strong, durable, free from discoloration, and dimensionally stable. Installation is a simple matter. Panels of "Lucite" are light in weight and easy to handle.

Extruded "Lucite" can be formed readily into desired shapes and is available in a wide range of transparent and translucent colors. For further information on how you can incorporate "Lucite" into your lighting designs write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 734, Du Pont Building, Wilmington 98, Delaware.

Quality Controlled

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The fixtures illustrated above, and many more too, employ "DieLux" die castings as an integral part of the unit. 1. No. WB-24 Wall Unit. 2. No. 1313-6630 Recessed. 3. No. 500 Ring Fixture. 4. A-14 Swivel Unit. 5. No. 8585 Hospital Light. 6. No. R-54 Exit Light. 7. No. 750 Recessed. 8. No. 99 Eyeball Unit.

Write for your copies of the following PRESCOLITE literature: No. 9 (Recessed and Surface Fixtures), No. EX-1 (Exit Lights), No. LL-1 (Louver Lights), No. HD-1 (Swivel Lights), No. AE-3 (Drawings and Specs.)

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ALL-NEW Paper Drawer Cabinet!

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Four heights available: 29″ and 27″ (five drawers); 25″ and 23″ (four drawers). Stores 24″ x 36″ papers. Mounted on legs, wheels or formed steel base.

Your Brunswick representative will give you the details on this all-new Paper Drawer Cabinet (and the rest of the line) anytime. Write: The Brunswick-Balke-Collender Company, 623 South Wabash Ave., Chicago 5, Illinois.

JUST ONE LINE CONTINUES TO SET THE PACE . . . IT'S **Brunswick**

SUN AND SHADOW:

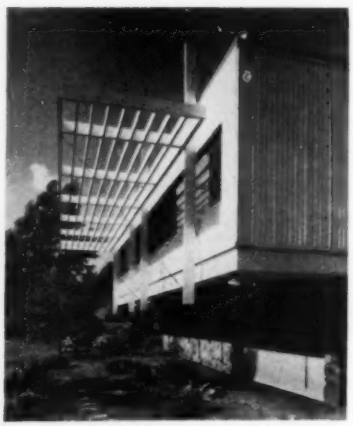
The Philosophy of an Architect by MARCEL BREUER

For the first time in publishing history, **MARCEL BREUER** *presents a complete summation of his philosophy, his works, in a strikingly different book, edited by Peter Blake, designed by Alexey Brodovitch, complete with 307 superb illustrations of Breuer's work.*

A TRULY UNIQUE PRESENTATION

Handled in a way never before attempted in an architectural publication, Breuer's work — from the smallest houses to the largest commercial and cultural buildings — is presented as a series of revolutionary ideas that have affected many things. His work is not presented as a chronological succession of buildings, for the same idea may have produced the design of a chair or a skyscraper. These ideas are further dramatized through the use of bold illustrations and brilliant color.

Marcel Breuer discusses and displays the entire development of his work and thinking, from his first attempts at the Bauhaus in 1920 to his current fulfillment in 1955. He gives a brilliant statement of his basic philosophy, and vividly discusses such topics as Architecture in the landscape, Thoughts on the city, Structures in space, Colors, Textures, Materials, Stairs, Fireplaces, Sunshades, Furniture, Art in space, The house, The multiple house, Educational, cultural, commercial and industrial buildings.

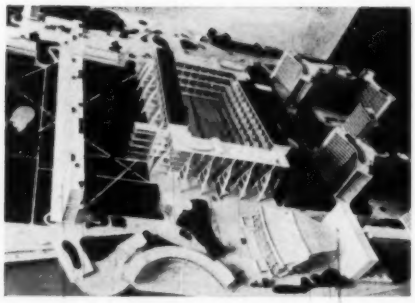


"The sun control device has to be on the *outside* of the building, an element of the facade, an element of architecture. And because this device is so important a part of our open architecture, it may develop into as characteristic a form as the Doric column."

F.W. DODGE CORPORATION

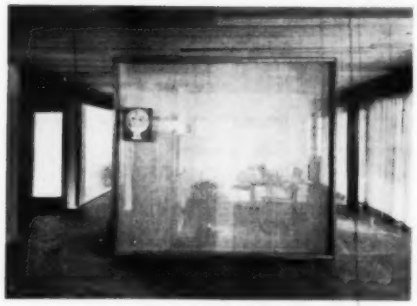
DODGE BOOKS • F. W. DODGE CORPORATION

"A building is a man-made work, a crystallic, constructed thing. It should not imitate nature—it should be in contrast to nature. A building has straight geometric lines. . . . I can see no reason at all why buildings should imitate natural, organic or grown forms."



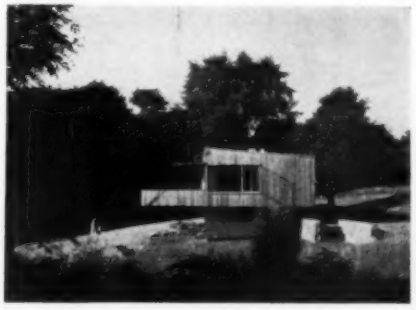
"I think that the scale of big-unit planning will retain all the excitement of modern city architecture. It will be a space for the individual in which he can enjoy his life—a place where he need not dodge the automobiles all day to save his life."

"I think the answer is that, in reality, the simpler the space, the plainer the backdrop, the more important becomes the individual human being seen against that backdrop. And the more important become his possessions, his books, his collections of photographs and paintings, his children, his dog, his cat."



"The nature of the space within our buildings or between them is indeed the reality of architecture. . . . To be entirely satisfactory it must be a unity of the practical and the aesthetic."

"Why do we like to 'express structures?' Is there any particular reason why structure should be identical with the architectural form? I think there is, to a great extent. Everybody is interested in seeing what makes a thing work, in seeing the inner logic of things."



"We seem to like (texture), we like the touch of it in somewhat the same simple way as we like warmth. The atavistic, physical sensation, the touch aspect of the natural materials gives us something—perhaps confidence."

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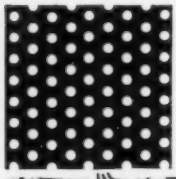

Escalator balustrades of perforated, anodized aluminum panels. Conceal cathode tubes which illuminate escalator treads and present attractive surface appearance.

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Room dividers of perforated metal, separate valuable mezzanine floor space into smaller sections when needed. Provide privacy, smart appearance, and ventilation.

Courtesy Hotel New Yorker. Photo by Gottscho-Schleisner

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 408)

policy was met; and it was not until ODM changed its dispersal directive that Public Buildings Service was instructed to re-submit the survey proposal for this building, the spokesman said.

The new policy leaves more responsibility to agency heads in the location of new construction. If it is determined that buildings must be located nearer target areas than safe dispersal distances dictate, responsible authorities must (1) include suitable protective features in the building design, and (2) try to situate on land offering some protection in its contours.

BILL WOULD ENCOURAGE U.S. DISPERSION POLICY

Senator Wallace F. Bennett, Republican of Salt Lake City, has introduced legislation designed to promote dispersal of industrial facilities and building construction where the government contributes to the cost. No hearings had been scheduled by the Senate Banking committee.

Primarily a declaration of Federal policy, the bill states that in the construction of any government-owned industrial facility, in rendering any financial assistance for construction, expansion or improvement, the Department of Defense shall apply the principle of the geographical dispersal of such facilities "to the greatest practicable extent" in the interests of national defense.

One section notes that existing facilities can be used where failure to do so would result in "increased cost of procurement, economic dislocation within any region, or undue delay in the procurement of any article or service."

HOUSE GROUP SCHEDULES INQUIRY ON AIRPORT AID

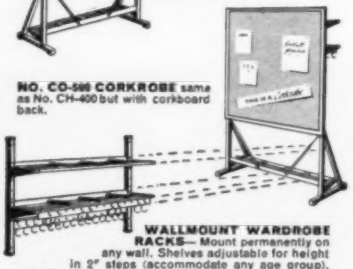
Federal airport aid allocations administered by the Civil Aeronautics Administration (Department of Commerce) will come under the Congressional spotlight.

Rep. Robert H. Mollohan, West Virginia Democrat, said his legal and monetary affairs subcommittee of the

(Continued on page 418)

A system of multi-purpose movable steel wardrobe racks with either a chalkboard (blackboard) or a corkboard (bulletin board for pictures, maps, etc.) back. These sturdy, welded furniture steel units provide: (1) Means for holding coats, hats, overshoes and lunch boxes in an efficient and orderly manner; (2) Chalkboards or corkboards to aid class instruction; (3) Efficient, large capacity, space-saving wardrobe units, that go wherever needed, fit any space, and permit complete flexibility in room arrangement.

NO. CH-400 CHALKROBE 4'2" long, 25" deep, 6'1½" high on glides (or 8'4" high on casters). Hat shelves and hanger bars are adjustable for height—accommodate every age group—(Hold 16 with coat hangers or 24 with coat hooks.) Off-floor shelf for overshoes and 50" x 48" chalkboard.



NO. CO-500 CORKROBE same as No. CH-400 but with corkboard back.

WALLMOUNT WARDROBE RACKS— Mount permanently on any wall. Shelves adjustable for height in 2" steps (accommodate any age group). Hold 4 spaced coat hangers or 6 coat hooks per running foot. Units interlock to make continuous rack of any length.
No. AW-3 Wallmount Coat and Hat Rack 3'2" long
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No. B-3 Wallmount Overshoe Rack 3'2" long
No. B-4 Wallmount Overshoe Rack 4'2" long

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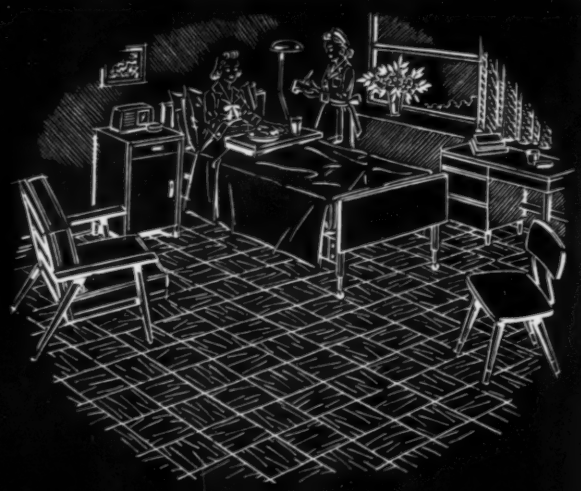

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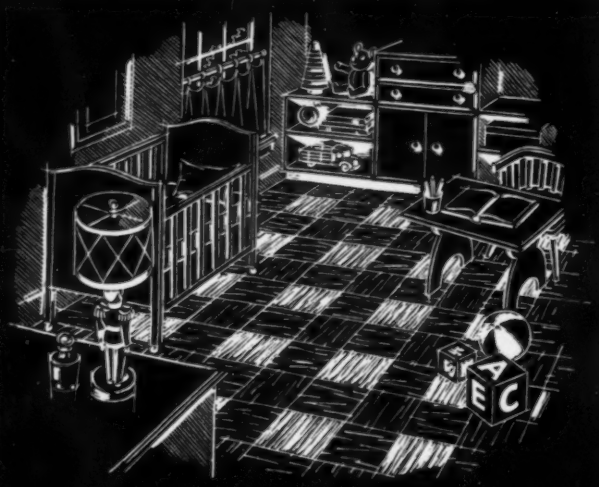

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W R I G H T

"A REAL CONTRIBUTION TO SCHOOL PLANNING LITERATURE" John Lyon Reid

TOWARD BETTER SCHOOL DESIGN by William W. Caudill

So complex is today's task of designing a good school that architects need planning information that goes beyond physical considerations into the social, economic and cultural forces which affect the school system. At the same time they need practical information that offers concrete solutions to planning problems that they are encountering daily.

TOWARD BETTER SCHOOL DESIGN contains this vital information. Working from his immediate experience, William W. Caudill successfully relates school design to the aims and methods of education, to the influence of environment on the learning process, and to the role of schools as community institutions. He shows how the planner must assess every factor, weigh each one, and plan an architectural solution to his specific educational, economic and environmental problems.

William W. Caudill is eminently qualified to render aid and advice on the task of planning schools and school building programs. In his twenty-year school planning career he has won an international reputation for combining a practical approach with exciting creative vision. As research architect at the Texas Engineering Experiment Station of Texas A. & M., he pioneered studies of classroom shapes and sizes as related to physical and emotional environment, and formulated many of the basic principles upon which good schools are being built today. During the last four years he has designed over fifty schools and has lectured and served as a consultant throughout the United States.

Education and Enviroment: Caudill demands that a good school must be designed from the inside out, and "every idea, every material, every dollar related to the needs of the pupil." What are the physical and emotional needs of the pupil? How does the learning process affect the form of the building? What is the best physical and emotional environment in terms of room shape and size, fenestration, ceiling height, light, color, textures, acoustics, ventilation, landscaping?

Economy: Caudill attacks the problems of costs head-on. He clearly differentiates between "low-cost" schools and "economical" schools, and quotes actual cost figures to illustrate his points. He explains how to set up a cost-control plan, and how total costs are affected by land, shape and size of building, materials, structural frame, construction methods, space allocation, and service equipment. He compares prime and maintenance costs to show how "saving" on one may produce serious loss on the other. Finally, he discusses the proper timing of bid-letting as a cost-cutting tactic.

SEVEN EXTENSIVE SECTIONS

the PUPIL and the school plant
EDUCATION and the school plant
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the PLANNING PROCESS and the school plant

91 SPECIFIC CASE-STUDIES FROM ACTUAL PROJECTS

Each case study is presented in 3 parts: 1) the Problem, 2) the Approach, 3) the Solution. Here are a few of them:

Can boiler rooms have educational functions?
How can a very small site located in enormously expensive property be best utilized?
Can improvements in the appearance and economy of hardware be made?
Can corridors be used for educational purposes?
What is a good way to provide easel painting in Kindergarten?
Can a school library be designed to serve the community?
Can toilets be designed to minimize control problems?
Can open type corridors be used successfully in Northernmost areas?
Can low budget gyms be lighted by natural means effectively?
Can improvements be made on combination of cafeteria service with other school functions in an elementary school?
Can a highly compact school plant have decentralized classrooms?

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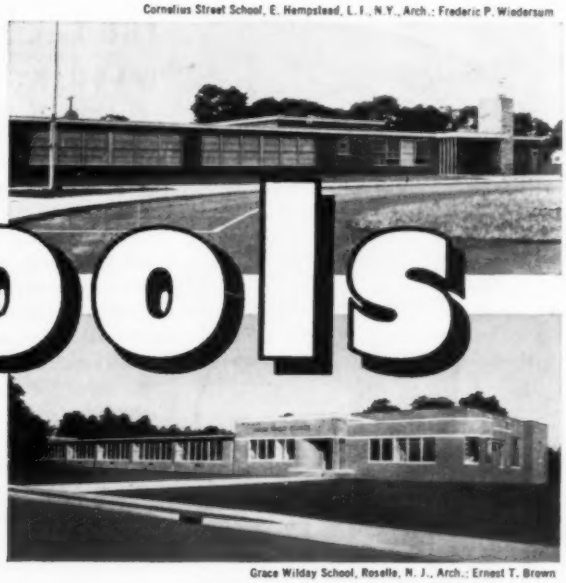
Cornelius Street School, E. Hempstead, L. I., N.Y., Arch.: Frederic P. Wiedersum

schools



Central Dauphin High School, Harrisburg, Pa., Arch.: Edmund George Good, Jr.

Grace Wildey School, Roselle, N. J., Arch.: Ernest T. Brown

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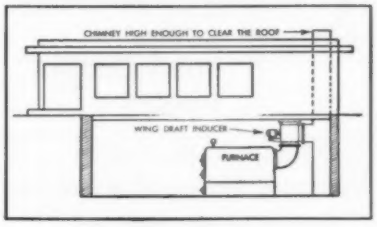

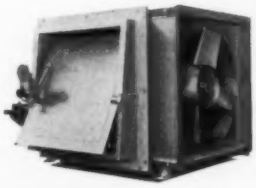

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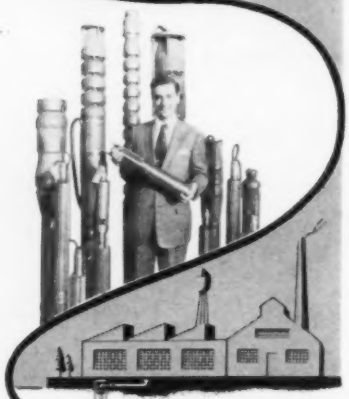

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THE RECORD REPORTS
WASHINGTON TOPICS

(Continued from page 414)

House Government Operations group would probe the broad powers of the current act and the huge amounts of money appropriated to CAA for allocation to states to assist them in constructing new airports and improving existing ones. It is imperative, he said, that Congress maintain a check to see that the money is spent economically and efficiently.

This program has kept many architects and engineers busy over the past several years and recently has been expanded for the years to mid-1960.

Mr. Mollohan's inquiry stemmed from charges of waste in allocations to Detroit-Wayne Major Airport at Romulus, Mich., he said. The subcommittee will try to determine whether the Commerce Department and the CAA are encouraging the construction of airport for the "horse and buggy" reciprocal-engine era, or the vast new turbo-prop and jet age, it was said.

Another interesting field to be covered by the investigation is the extent to which the armed services, through their membership on the Air Coordinating Committee and its panels, dominate, if they do, the determination of civil aviation policy.

HOME WIRING DEMAND MAY SWAMP INDUSTRY

Electrical contractors appear to be worrying about too much business, not a lack of it. A recent day-long meeting of the Business and Development Committee of the National Electrical Contractors Association (attended by manufacturers, distributors, retailers, electric utilities, labor and the contractors) disclosed concern as to whether they can fulfill demands resulting from the heavy promotion programs for home rewiring. These are being undertaken both within the industry and outside.

The electrical contractors are wondering about the supply of skilled electrical labor to handle the rush of work expected in the months ahead, and the availability of qualified contractor organizations to manage the jobs. It is estimated that 20 million American homes presently require an average $250 expenditure for electrical modernization; this comes to $5 billion in total.

(Continued on page 422)

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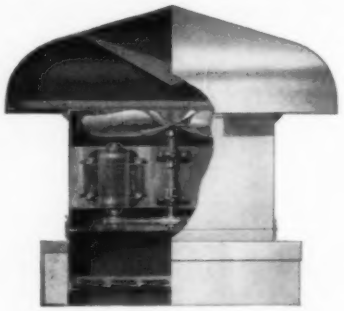

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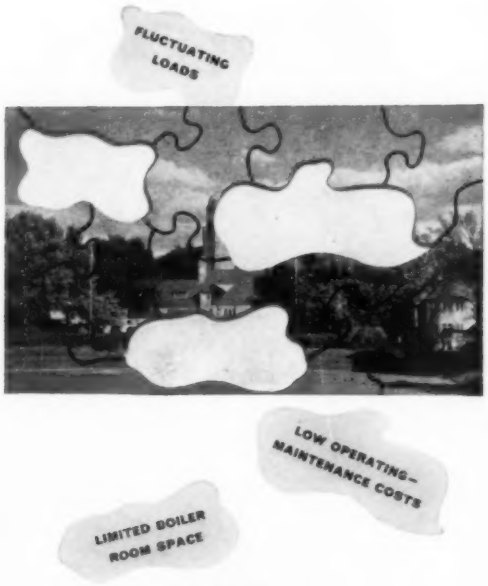

HOW A JIGSAW HEATING PUZZLE WAS SOLVED

KEWANEE reserve plus rated boilers

MET SCHOOL HEATING NEEDS

A jigsaw puzzle heating problem . . . that's what it looked like at the Cranbrook School for Boys, Bloomfield Hills, Michigan, since the heating needs were so varied. But every puzzle piece fell into place when Kewanee Reserve Plus Rated Boilers were installed, because all heating needs were solved. Here's the way it worked:

Problem 1: Limited boiler room.

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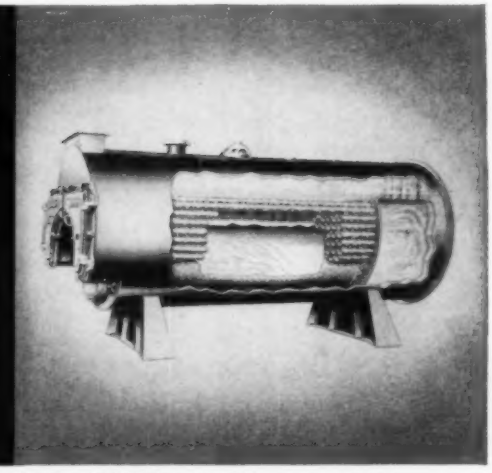

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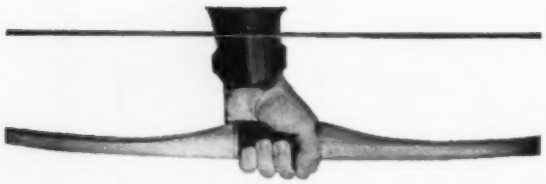

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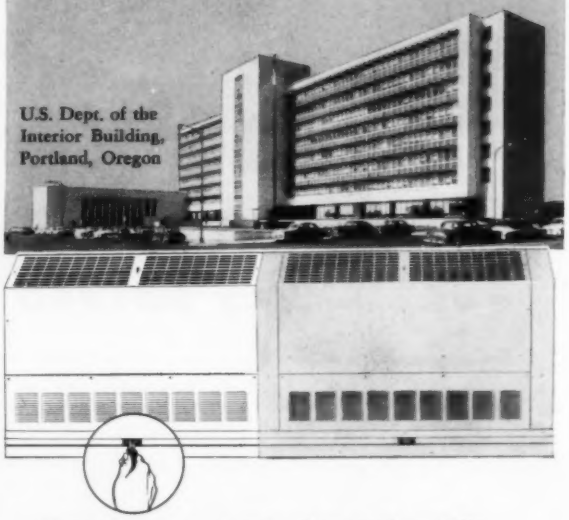

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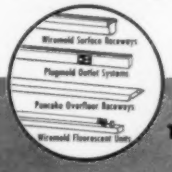

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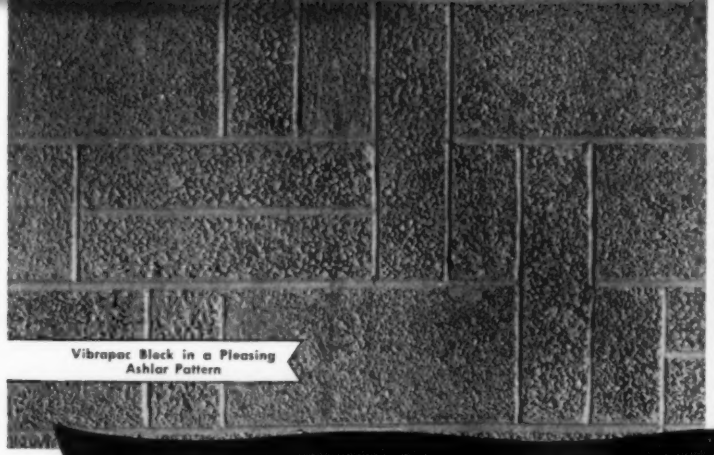

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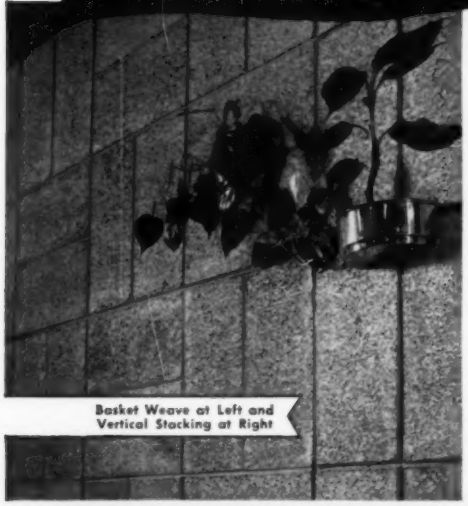

Basket Weave at Left and Vertical Stacking at Right

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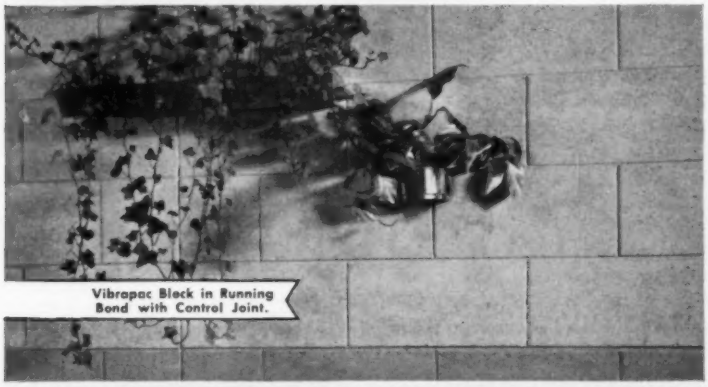
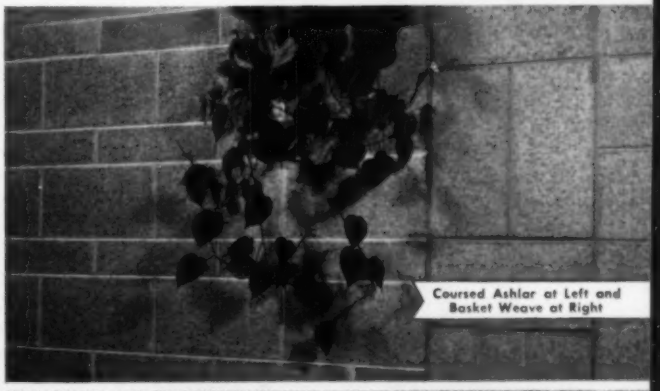
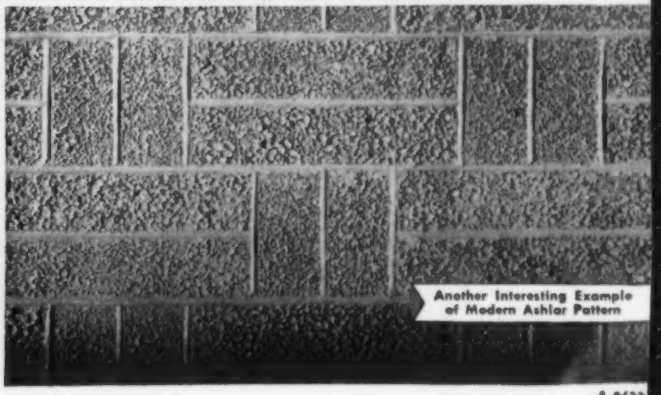


Vibrapac Block in Running Bond with Control Joint.



Coursed Ashlar at Left and Basket Weave at Right

Vertical Stacking at Left and Horizontal Stacking at Right.



Another Interesting Example of Modern Ashlar Pattern

A 8422

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Cutting costs from a state average of $13.85 to $10.00 per square foot in the construction of St. Jude's School at Havre, Montana was achieved in part by the use of Type 430 Stainless RIGID-tex Metal as a facing material for Tim-Deck wood window spandrels.

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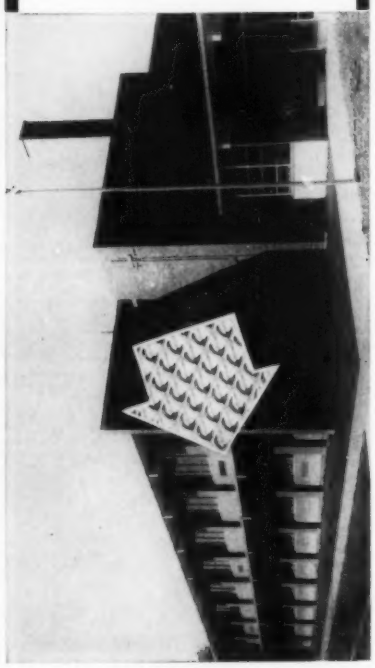

THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 418)

All electrical contractors did slightly more than $4 billion worth of business in 1955.

ADDENDA

The housing agency revised upward its estimate of new non-farm housing starts for calendar 1955 — from 1,250,000 to 1.3 million. The revision was announced after the Housing and Home Finance Agency had a good look at final 1955 figures. "At the base is our expanding economy," said Administrator Albert M. Cole. "We are producing more goods of all kinds. And we are consuming more goods of all kinds. An alert building industry is capable of erecting — and selling — perhaps as many homes this year as last, despite the mild curbs imposed upon it six months ago."

Urban renewal achievements of his agency during 1955 were summarized last month in a statement from Urban Renewal Commissioner James W. Follin that gave year-end figures for the agency's 16-month-old Urban Planning Assistance program. In 1955, a total of $474,946 in Federal grants was approved to aid urban planning in 76 small towns, six metropolitan areas and two regional areas. The 15 grants, all but one of which were approved in the calendar year 1955, were made to state, regional and metropolitan planning agencies in 13 states. The Urban Planning Assistance program, authorized by the Housing Act of 1954, provides for Federal grants to official state planning agencies to help them give planning assistance to communities of less than 25,000 population, and to official state, regional and metropolitan planning agencies for work in metropolitan and regional areas. Grants may not exceed 50 per cent of the cost of the projects for which they are to be used.

Resources and requirements of shelter against nuclear weapons in the event of enemy attack are being studied by two research firms under contract to the Federal Civil Defense Administration. The Chicago Research Department of the American Machine and Foundry Company is conducting a three-month study of Milwaukee "to formulate standards for evaluation" of buildings

(Continued on page 426)

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amazing new
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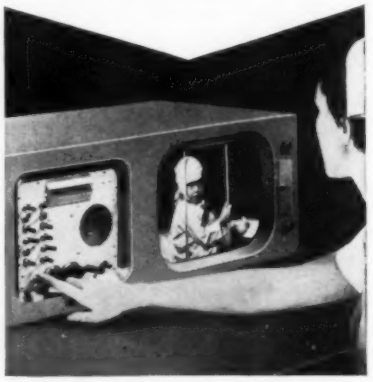

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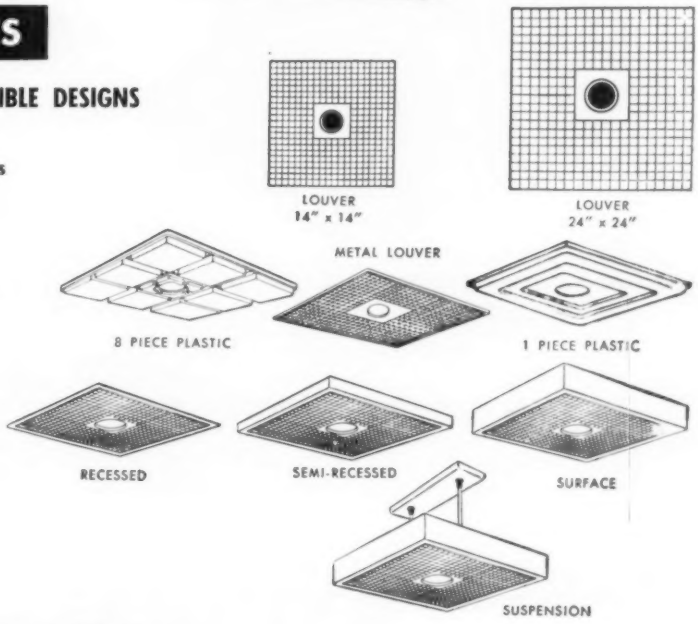

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Get ALL the facts

Whether you're planning a lighting layout for schools, office buildings, stores or residences it will pay you to get the true facts of the "Skylike Story." Installation, efficiency, maintenance and cost data—yours for the asking. Send request to our Bound Brook Office.

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adds new life to your office

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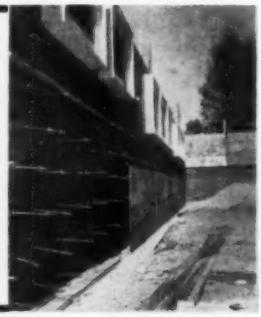

General Contractor George H. Allen is well pleased with the Gates forming system and the Gates rod-type ties used for the foundation of the Mayflower Congregational Church now under construction in Englewood, Colorado. Architect is Gordon D. White.

Gates forming systems adapt themselves to all types of jobs and construction. Their use assures top quality construction, plus on-the-job savings in time and labor.

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APRIL 16 - MAY 16
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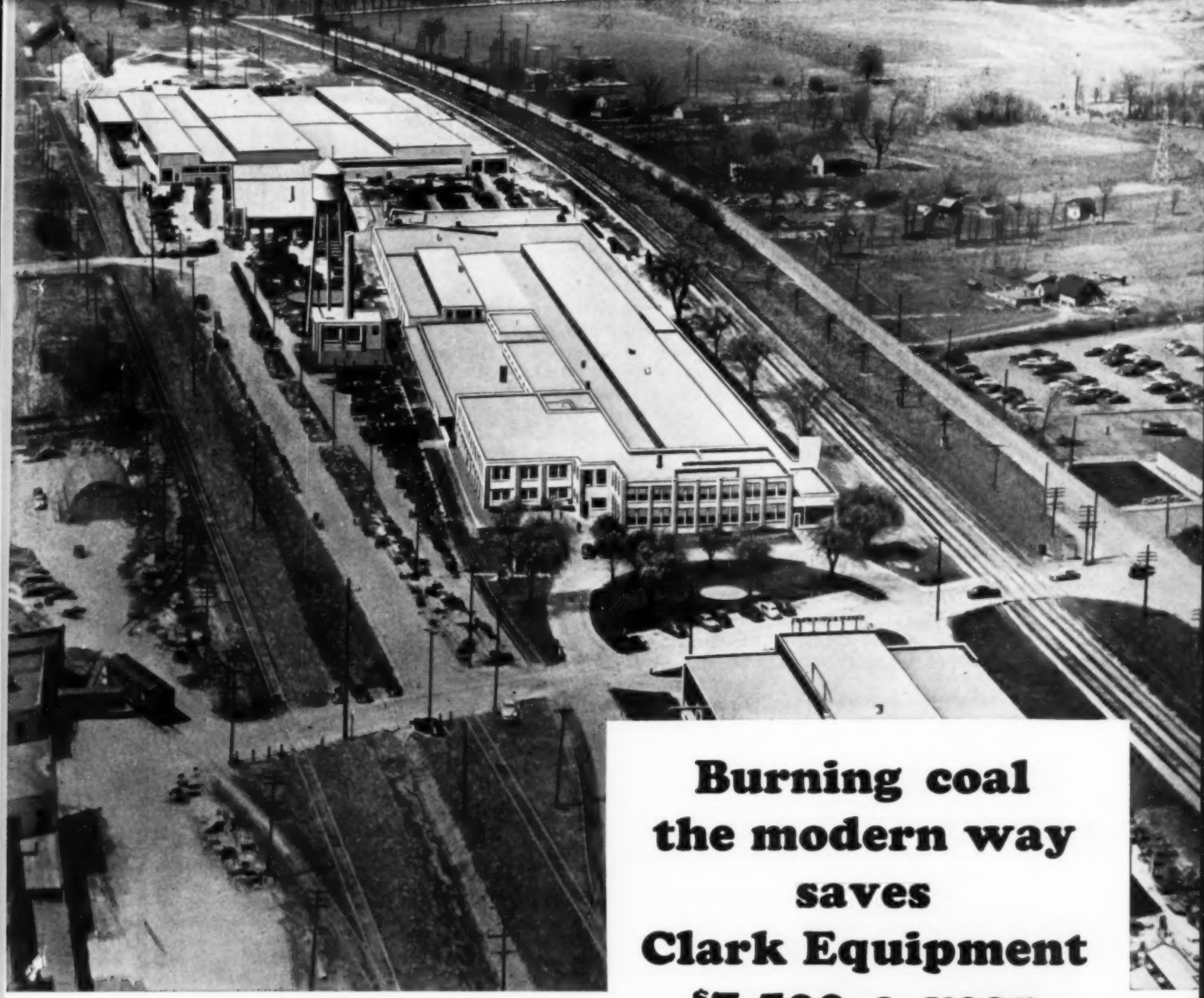

Burning coal the modern way saves Clark Equipment $7,500 a year

Consult an engineering firm

Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar • Automatic coal and ash handling systems can cut your labor cost to a minimum. Coal is the safest fuel to store and use • No smoke or dust problems when coal is burned with modern equipment • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

Expanding production facilities at Clark Equipment Co., Battle Creek, Mich., created a need for more steam within the plant. In the face of rising overall costs, Clark engineers decided to meet this demand by modernizing the firm's power system.

Today, two watertube boilers utilizing spreader stokers have replaced three firetube boilers, underfeed fired. Stokers are fed by screw conveyor and controls are fully automatic. As a result of these and other aspects of its modernization program, Clark's boiler plant has now increased plant efficiency, supplying reliable, low-cost steam for all purposes—at a savings of $7,500 a year.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

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In hospitals, schools, theaters, office buildings . . . interruptions of electric power can endanger lives and property.

With an Onan Standby System, any interruption of highline electricity automatically starts the emergency electric plant and within seconds all essential equipment is operating normally. When power is restored the electric plant stops automatically. In many instances, just one power interruption will justify the cost of the standby power installation.

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SIZES AND MODELS FOR EVERY NEED

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THE RECORD REPORTS
WASHINGTON TOPICS

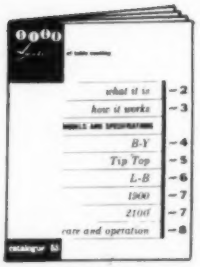
(Continued from page 422)

and other structures as shelters from blast, thermal radiation, initial radiation and fallout radiation. The results will be used to prepare a guide manual for evaluation and classification of potential shelter structures in other target areas. The second study, also going forward in Milwaukee, is being made by Wilbur Smith and Associates of New Haven, Conn.; this one will determine existing shelter resources and requirements, and recommend provision of additional shelter or modification of shelter requirements by accelerated evacuation.

Building shelter into American homes without attempting to redesign houses for greater blast resistance was suggested by Harold L. Goodwin, consultant to the Federal Civil Defense Administration, as the simplest answer to the atomic threat. Mr. Goodwin, addressing a session of the annual convention of the National Association of Home Builders in Chicago, said it "does not appear economically feasible" to design houses that would survive heavy atomic blast. But careful workmanship and relatively inexpensive design changes, he said, could make conventionally designed houses "somewhat" more blast resistant. Basements, he noted, offer good, inexpensive protection against all effects outside the major damage areas of a nuclear explosion.

Operation Home Improvement, the Joint Federal-industry effort to encourage the citizenry to regard 1956 as "the year to fix," was well under way last month. It had got its big send-off at a Washington, D. C., luncheon held in January at which Housing and Home Finance Administrator Albert M. Cole, on behalf of President Eisenhower, issued a formal proclamation designating "Home Improvement Year." An estimated $600 million worth of national and local advertising will support the drive throughout the year. HHFA is lending its full support to a campaign sponsored by the Chamber of Commerce of the United States and some 50 leading companies and trade associations in the building, home equipment and financing fields to (1) interest more people in improving their homes, and (2) make it easier for them to get financing, materials and services.

(More news on page 430)



FREE *catalog describes the* **SICO** *System for lower costs, multi-use of space and convenience*

SICO B-Y Table

typical of the quick folding, easy rolling units that instrument the SICO System of school, industrial and institutional seating. Cost less because they require no installation and seat greater numbers in less space. SICO Tables make multi-use of space practical and economical without any built-in construction. They permit any area to be converted from one function to another in a matter of minutes. Fast, safe operation because there are no latches, locks or catches. All units require small storage area—B-Y needs just 8¾ Sq. Ft. All have tough, sanitary, mellamine plastic tops mounted on 14 gauge, structural steel frames that are zinc lustron plated for lasting protection. All are equipped with 4 in. rubber casters. B-Y seats 16 adults or 20 children.

FREE CATALOG—fully describes the SICO System for greater economy and presents complete table specifications. (Listed Sweets: 22i/SE).

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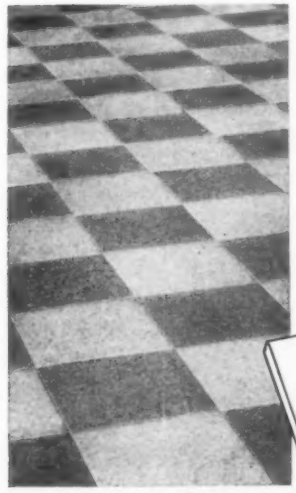
the most glamorous surface you've ever seen on standard cork tile

Another "first" for Dodge—the new SG finish on Dodge Standard Cork Tile. This revolutionary surface has a super gloss and super smoothness that will make resilient, comfortable Dodge cork tile floors even more popular.

The SG finish brings out the rich grain and mellow tones of genuine cork. It has a high degree of stain- and spot-resistance; is water-repellent; holds its luster with a minimum of maintenance.



*Firestone Velon surface

You'll want to introduce this new flooring as soon as possible. *Write us for further information on Dodge Standard Cork Tile with SG finish.*

Dodge Standard Cork Tile and Dodge Vinyl-Cork* Tile are made in regular and specialty patterns that provide wood-floor beauty with the convenience and comfort features found only in genuine cork.

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The new Constellation Series of Water Coolers by Oasis will grace any architecture. They have new, deeper, diagonal, divided tops of sparkling stainless steel that quickly whisk away water while keeping themselves spotlessly clean. And they are all decked out in Desert Dawn, the freshly created color-tone—exclusively Oasis.

Star-Spangled Features. The Oasis Pre-Cooler and Capacity Booster more than double the number of cold drinks. The No-Squirt Bubbler gives a smooth, level drink regardless of varying water pressures and operation is whisper quiet.

Complete Line. Capacities range from 2 to 35 gallons per hour. And only Oasis offers the wonderful series of Hot 'n Cold models which supply water piping hot for instant beverages and cold water for drinking.

Specify Oasis and you specify the most beautiful, the most efficient water coolers available today.

Send for Oasis 4-color Specification Sheets and Roughing-in Drawings. Use the coupon below!

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Please rush the whole story–spec sheets and roughing-in drawings on your Constellation Series of Water Coolers.

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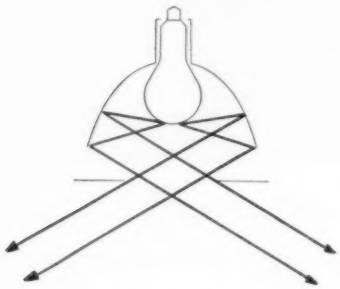

25% more light *with Century's 902 series. This latest instrument was developed and engineered for greater spacing, fewer units, a saving of current plus higher efficiency. This inconspicuous flush unit with 6" opening is excellent for stores, restaurants, lobbies and auditoriums. The precision formed specular Alzak reflector gives an even distribution of light on surfaces. For flattering effects, pink or gold reflectors are available at slightly higher cost. Household type lamps of 200 or 300 watts are used. Perforated ceiling plates can be provided. Specify top or bottom access or degree of sloped ceiling. #902 shown above $30.00 (lamp extra)*

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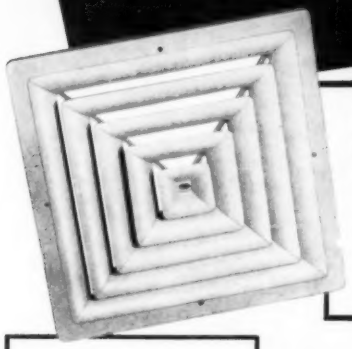

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High quality at a low unit cost, for economy installations.

Lima Ceiling Diffusers combine beauty that blends harmoniously with modern ceilings . . . and performance that assures comfortable and correct air distribution without drafts. The attractive light beige finish is permanent.

Lima step-down vanes have curved contour without straight edge for maximum free area. Supply air is gently deflected outward and slightly downward for rapid diffusion in all directions at correct angle to induce aspiration of room air and eliminate ceiling streaks.

Lima Ceiling Diffusers and Dampers offer many advantages as return air outlets and vents, eliminating large unsightly grilles. Write for literature and complete catalog of Lima Diffusers, Registers and Grilles for Floor, Wall, Baseboard and Ceiling.

See our catalog in Sweets
Architectural File 29f/Li

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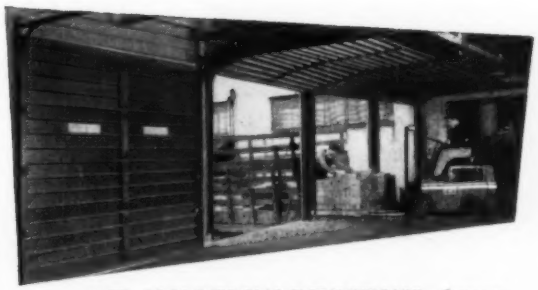

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CLEAN, MODERN FUNCTIONAL LINES that blend smoothly with all types of architecture are the hallmark of Morrison Roly-Doors.

SIMPLIFIED DESIGN ensures safe, easy, trouble-free installation and operation . . . manual, electrical and by remote control.

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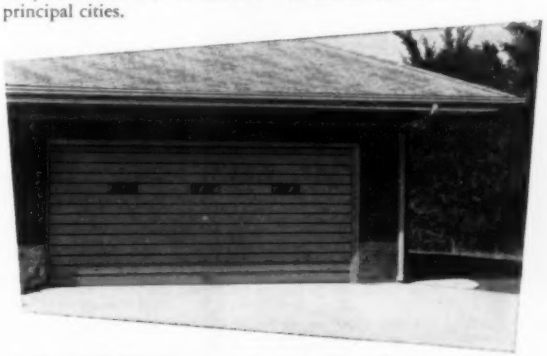

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EDGE-LITS—Smart new styling features . . . cast aluminum construction, satin finish . . . hinged access doors . . . **Ask for the "45 line".**

SURFACE—Cast aluminum, satin finish and hinged access doors . . . flush, almost invisible hardware . . . "sightline" inscription panels. **Ask for the "40 line".**

RECESSED WALL— Protective guards or shock-resisting panels . . . cast aluminum, satin finish . . . hinged access doors. **Ask for the "54 line".**

All fixtures available with special wording and 4", 6" or 8" letters with red, green and white color combinations.

1331 Willoughby Ave., Brooklyn 37, N.Y.

CONSULT mc Philben Lighting SPECIFY

Representatives in major cities

THE RECORD REPORTS

REVIEWING THE RECORD

(Continued from page 426)

Footnotes to architectural history, from the ARCHITECTURAL RECORD of 1906:

The new Harvard Club, designed by McKim, Mead and White (below), was a distinct success, according to the report of Herbert D. Croly in the March issue. "Men who are rarely moved to express an opinion about the appearance of a building or a room feel themselves safe in becoming enthusiastic over the Harvard dining-hall," he said. "The members of the club bring their friends in troops to the building so as to show it off, and when these same gentlemen sit down to a meal in the new hall, they seem to feel that the prosaic act of eating a fifty-cent dinner (*sic!*) is sanctified by the majesty of their surroundings."

In a review of "Russell Sturgis's Last Book" (a baffling title — Mr. Sturgis, a regular contributor to the RECORD, was still alive and writing), John LaFarge digressed from the subject — *The Artist's Way of Working in the Various Handicrafts and Arts of Design* — long enough to give his experience of an *architect's* way of working: "One of the best known of our architects was telling me a few weeks ago how heavy was the following out of certain styles, because they required a great deal of drawing and personal attention; while following other styles required very little personal attention, and a constant, mechanical, commercial repetition was sufficient."

Japanese art was, as it had been in the two previous issues, a matter of interest again in March; the occasion was the publication of Ralph Adams Cram's *Impressions of Japanese Architecture and the Allied Arts.* On the reviewing end this time was Russell Sturgis, who discussed the book in the Notes and Comments section, and incidentally made some observations on the impact of Western arts on Japan — not an en-

(Continued on page 434)

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it's terrific!
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- mild finger grip knurl
- light in weight
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- broad push-button for easy use

KOH-I-NOOR DRAWING LEADS No. 2200
in 17 precision-perfect degrees of hardness and 8 flexicolors.

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Glider BLUE PRINT RACK

FOR ARCHITECTS, ENGINEERS, CONTRACTORS & FACTORIES

NOW EASY TO FILE... EASY TO FIND... YOUR BLUE PRINTS

20 Exclusive Features: including:

1 No holes to punch.
2 Insert sets of prints easily.
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4 Various sizes of prints accommodated.
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8 Clearly visible index shows location of sets.
9 No bolts that scratch furniture.
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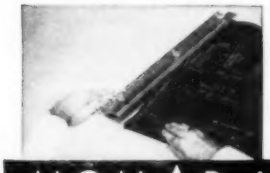
$94.50 FOB Chicago including 12 plan holders



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. . . *are* **'Wired for TV'** *with*

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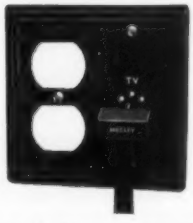
MOSLEY Wall Plate Sockets are low in cost – easy to install to meet requirements of electrical code. They are *TV Engineered* for efficient performance and styled to harmonize with existing electrical wall plates.

Your clients will want their homes *Wired For Tomorrow* . . . Wired For TV with MOSLEY TV Wall Plate Sockets!

MOSLEY TV Wiring Devices are available coast-to-coast. Write for name of nearest supplier.



Type AC-1PK. List Price $1.87
Single TV socket for one antenna lead-in plus matching wall plate for double convenience outlet. Complete with TV Plug, plated machine screws, metal barrier for separating AC and TV services and full instructions. Less box and AC socket. In brown or ivory.

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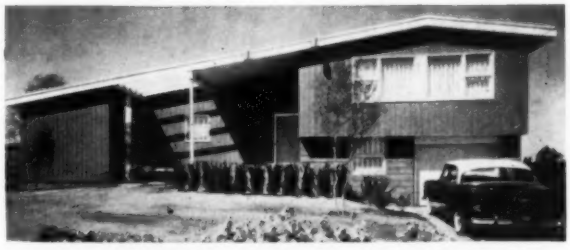

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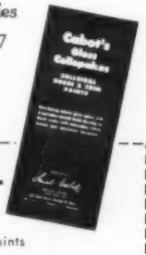

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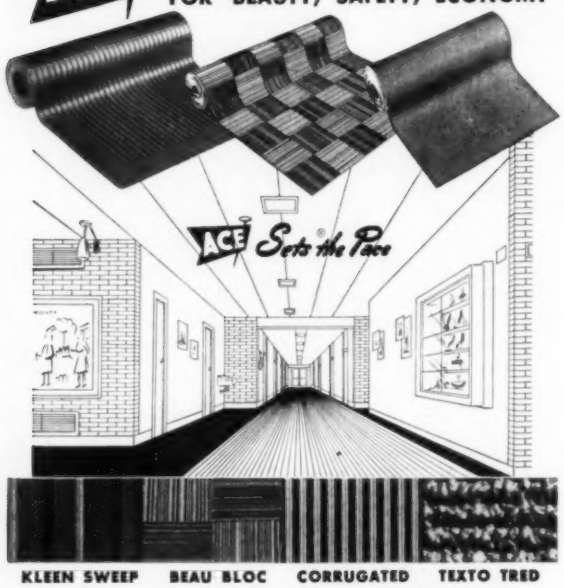

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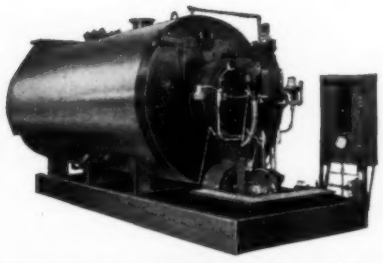

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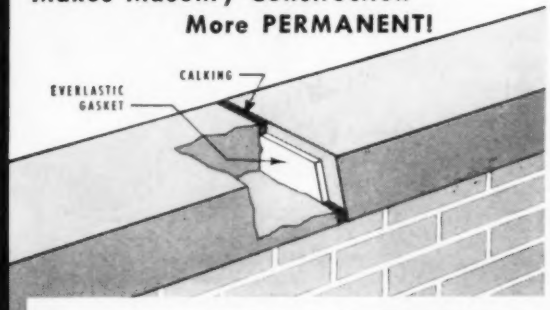

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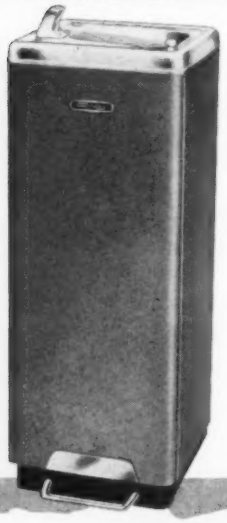

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REVIEWING THE RECORD

(Continued from page 430)

tirely happy situation, in Mr. Sturgis's opinion. "On several occasions," he said, "Japanese architects and students of architecture have come to me with requests for guidance in the study of architecture in Europe and America; it has been sad to see them here in the attempt to transplant to the Far East the entirely decadent architecture of the West — an architecture without unity, without significance, a congeries of ancient ideas misapplied in modern times."

Still other Western impact, with who knows what kind of results, was felt by the monks at the monastery of Mar-Saba (below), who were visited by William G. FitzGerald, seeking architectural exotics in the Holy Land. Mr. FitzGerald bore his difficult journey with a relish that would seem to belie opinions commonly held about American tourists. On arriving at the monastery, he reported, "we dismounted from our mules and climbed a trail consisting of rocky steps, finally arriving at an ancient watch-tower, whence we beheld our goal in the fantastic pile of buttressed buildings below us. Near the outer gate of the monastery rose a second ancient tower, wherein we found a Christian watchman, who told us he was posted to scan the mountains and valley to see whether any Bedouin robbers or other dangerous visitors threatened to descend upon the Monastery . . ."

Armories, "a very special American architectural problem," were Montgomery Schuyler's subject in April, when he described the new 71st Regiment Armory in New York (Clinton & Russell, Architects) — a building more familiar to today's New Yorker as an exhibition hall than as "combined drill-rooms and club-rooms for our citizen soldiery." Said Schuyler of the new building: "The traditions one finds in full force, all the convention of the

(Continued on page 438)

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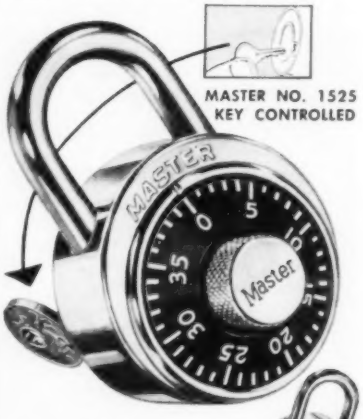

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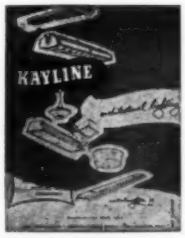

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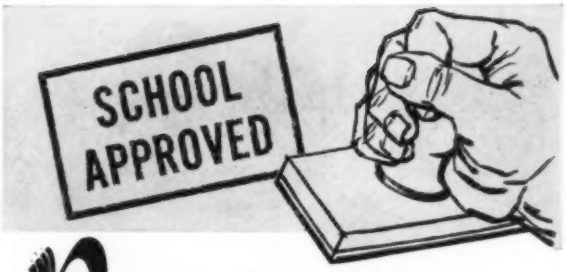

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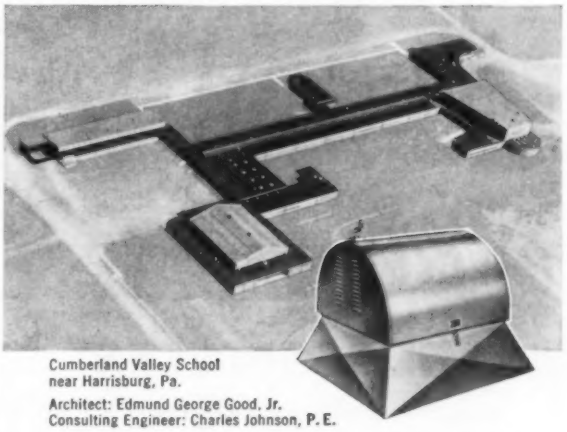

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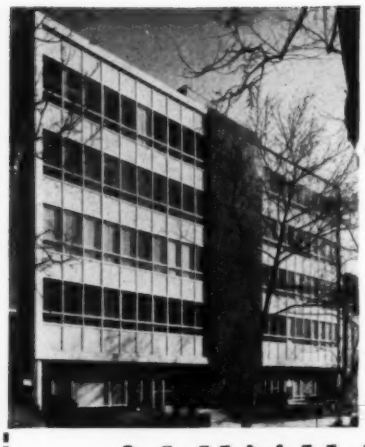

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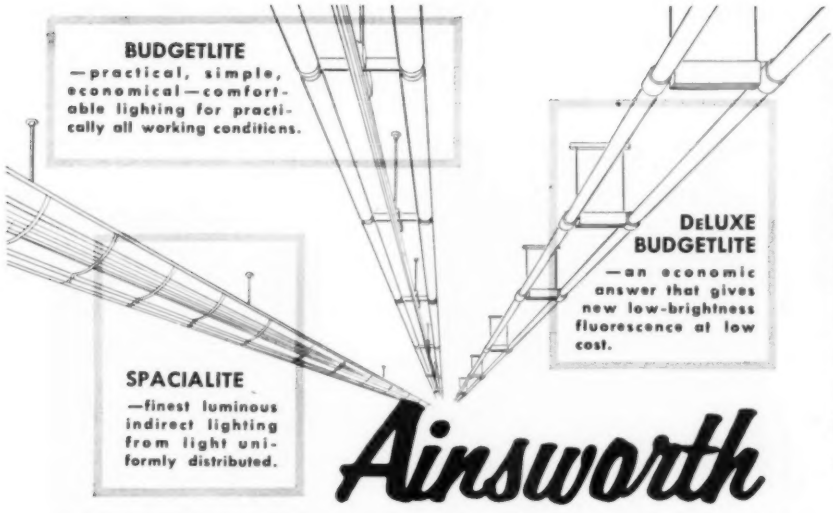
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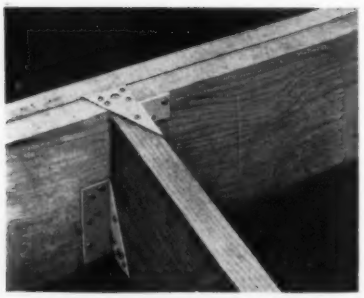

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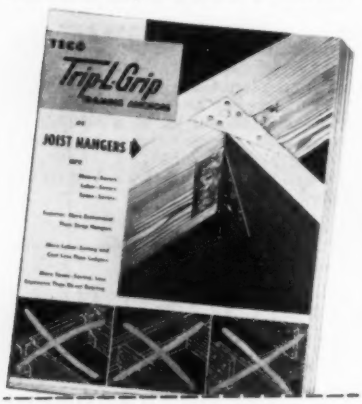

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THE RECORD REPORTS

REVIEWING THE RECORD

(Continued from page 434)

medieval warfare to which distance lends romantic enchantment, contrariwise to the actual and prosaic art of murder. The parapets are crenellated, though nobody is expected to shoot between the crenelles. The cornices are machicolated, though nobody expects to pour hot lead from the machicoulis. But the composition, with its flanking round towers on each side of the entrance which we are supposed to accept as a 'sally port,' especially in the deep segmental recesses of the main entrance, with the fewness and smallness of the openings, and the thickness of the wall indicated by their reveals, the effective bonding of the rough brick walls with rough light stone — all these things are of an undeniable attractiveness."

Ten pages of photographs of two non-historical Midwestern houses by architect Robert Spencer Jr. appeared without comment in the April issue; shown here, the exterior and dining room of the Adams house in Indianapolis

(More news on page 442)

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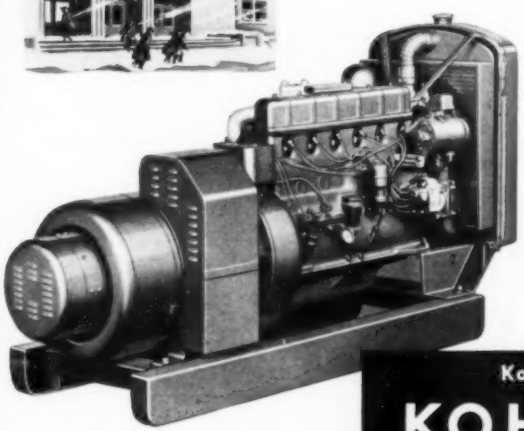

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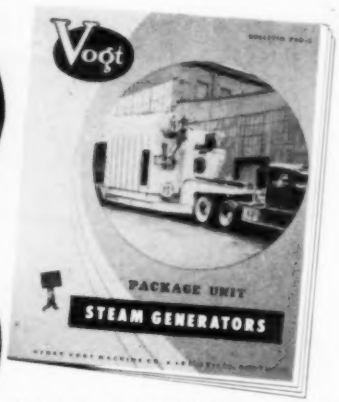

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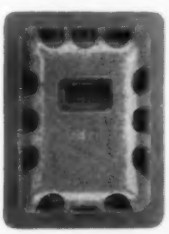

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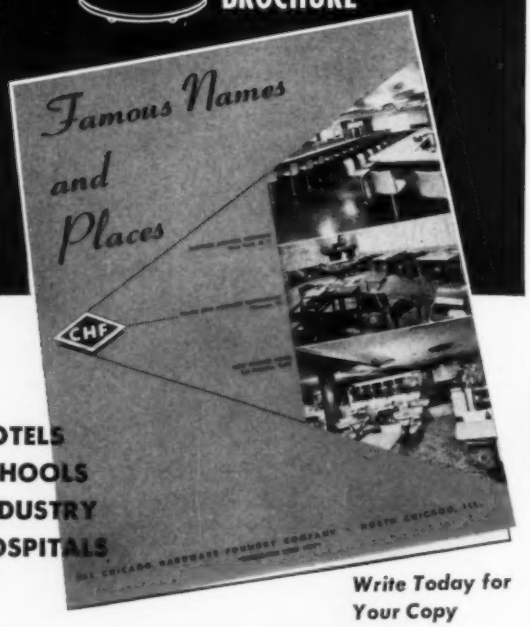

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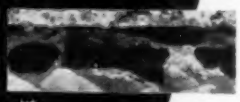

For complete details, write today for Bulletin SH-2. No cost or obligation.

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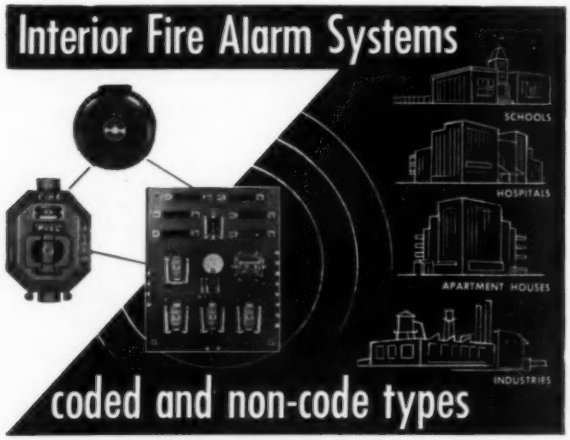
Interior Fire Alarm Systems



coded and non-code types

Complete reliability **is the one thing we demand from a fire alarm system. Therefore, when ordering Interior Fire Alarm Systems, be sure to specify equipment (control panels, stations, and fire alarm bells) produced by Signal Engineering & Manufacturing Co., the originators of A-C Fire Alarm Systems.**

Both coded and non-code types are available in various arrangements depending on type of building or establishment. Although Interior Fire Alarm Systems are intended primarily for warning occupants of a building, they can be connected into a municipal system.

Engineering representatives in principal cities are available to assist in specifications.

Write for Bulletin FA-7

Signal Engineering & Mfg. Co. has changed its name to

Wheelock SIGNALS
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also provides economy, long trouble-free service and installation ease!

You'll like working with Transite® Pipe . . . because it offers you the wide variety of shapes, sizes and fittings needed for almost limitless freedom of design. *Builders like it* . . . because it is economical. *Contractors like it* . . . because it is easy to assemble and install. *Homeowners like it* . . . because of its reputation for long, trouble-free performance!

For further information on Transite Pipe for the home, write to Johns-Manville, Box 60, New York 16, N. Y. In Canada, Port Credit, Ontario. Why not write, today?

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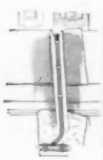

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SIDEWALK ELEVATORS

THE RECORD REPORTS

(Continued from page 436)

LARGEST CHICAGO APARTMENT NOW UNDER CONSTRUCTION

Chicago currently has under construction its largest apartment house to date. To be known as the 3950 Lake Shore Drive Building, it will contain 664 apartments in three 23-story towers. Distribution of space will give 80 per cent of the apartments two bedrooms, 10 per cent three bedrooms and the remainder one bedroom.

Entrance to the apartments will be through a large lobby which will be, as owner John J. Mack describes it, "an all-year around flower garden," with floral displays changed according to season. Fountains will also be a feature of the glassed-in entrance.

The roof of the one-story lobby will likewise be planted with flowers and hedges around three pools of water. The tenant's outlook will contain views of Lake Michigan and Lincoln Park.

In addition to the main entrance, occupants of the building will have keys to private entrances near to their own elevator lobbies. Ten electronically controlled elevators will furnish vertical transportation.

A garage included in the plans will accommodate 400 automobiles. The garage, which will be built on two levels, will entirely occupy the lower level of the building as well as part of the ground floor.

The exterior of the building, which was designed by Chicago architects Shaw, Metz & Dolio, will be brick in two tones of gray. The structure will be steel, concrete and brick. Estimated cost of the completed building is $10,000,000.

this couldn't have happened...

If the plans had called for

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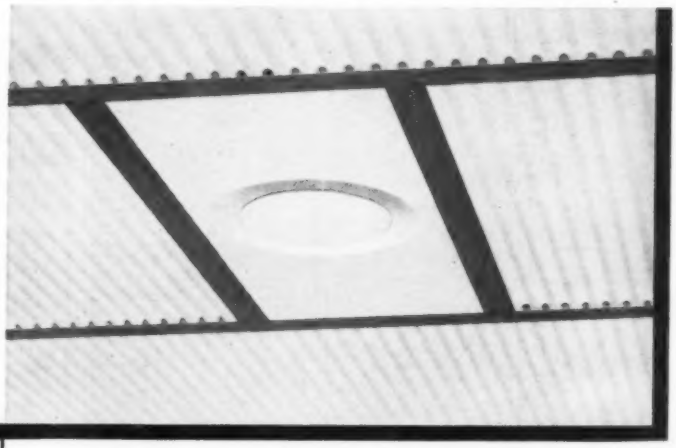
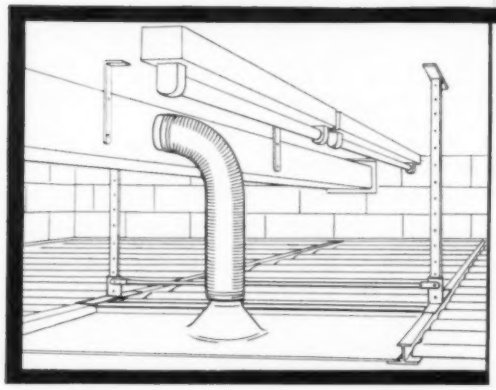
New Lumenated Ceiling Diffuser
for
BETTER APPEARANCE, DRAFTLESS PERFORMANCE





Out of 50 years' experience in air conditioning, heating and ventilating has come this new translucent plastic ceiling diffuser. Designed originally for use with Thermotank's Lumenated Ceiling, it presents a pleasing overall effect when installed with any illuminated or acoustical ceiling. The new diffuser is centered in a 15 by 36-inch translucent panel, mounted flush to the ceiling. It discharges conditioned air in a draftless pattern. The nominal rating is 200 cfm at 38 db.

Write for further data on this new Lumenated Ceiling Diffuser

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Women like *style* in the kitchen—and they get it, full measure, in these beautiful Curtis natural birch kitchen cabinets. Even more, they like *woman-designed* utility—and these units are right for a woman's reach, for a woman's way of working. Shelves revolve...slide forward ...swing in and out...are adjustable to put everything right into their fair hands. Curtis birch cabinets fit any size or shape of kitchen and are sold by leading lumber and building materials dealers everywhere. For complete information, write Curtis Companies Service Bureau, Clinton, Iowa.

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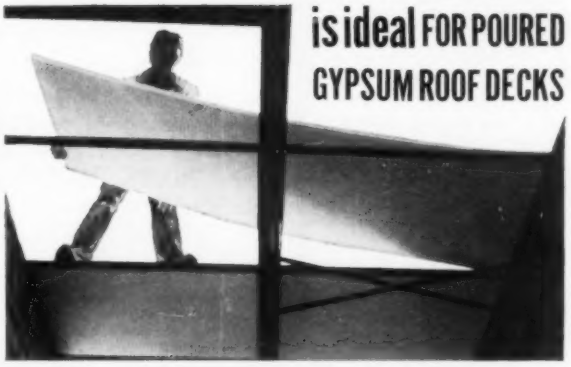

Only Hansotone* Perforated Acoustical Formboard offers the size and strength, speedy installation and rigid permanence that add up to such LOW COST per foot. Its outstanding acoustical qualities and high thermal insulation assure a truly efficient, attractive base for economical poured-in-place gypsum roof decks. White factory shop coated with .76 light reflection.

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See AIA File 4-L and Sweet's Cat. 2e/Ha.
**Reg. U. S. Pat. Off.*

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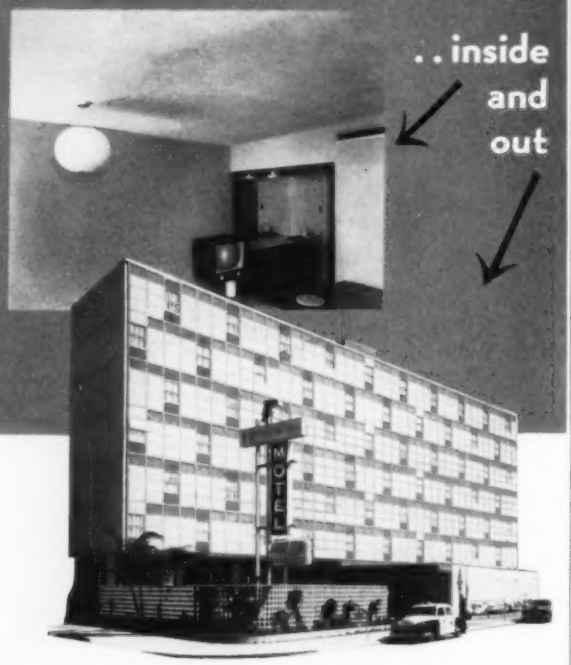
SURCOATING
Gives Concrete a Beauty Treatment



Architects: Curtis & Davis, New Orleans
Contractor: Lionel F. Favret Co., Inc., New Orleans

When a designer uses concrete as his major structural material, he also looks for something that will repair imperfections and protect its appearance. A SURCOAT treatment is the answer.

The new Pan-American Motel in New Orleans, Louisiana is SURCOATED inside and out. All patching and repairing of cracked, broken or deformed concrete was done with SURCO. Exterior concrete or cement block surfaces were weatherproofed with SURCO before they were painted. SURCO plaster was applied to all ceilings, directly over rough concrete. No grinding, honing, spackling, metal lathing or adhesive emulsions were necessary.

The SURCOAT treatment provides more than skin-deep beauty; it makes a clean, economical, waterproof finish which has exceptional durability.

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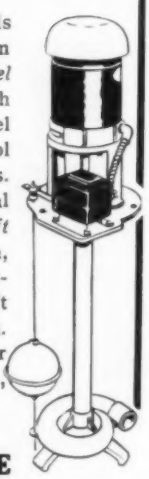
for home, commercial, industrial use



Submersible and standard shaft models—in discharge capacities ranging from 1200 gph. to 5450 gph. *Submersible model* has motor and automatic operating switch inside a hermetically sealed stainless steel housing. Housing acts as float to control pumping operations. Has no floats or rods. Installed complete in 16" x 18" sump. Ideal for home installations. *Standard shaft types* available also in bronze and cast iron, with pump capacities to 4600 gph. *Heavy-duty industrial models,* standard shaft types, available in bronze and cast iron. Capacities to 5450 gph. For details, send for catalog. Write Fairbanks, Morse & Co., Chicago 5, Ill.

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A Revolutionary
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Smooth Clear Writing with standard crayon on chemically prepared silicate surface. Easy, clean erasing.

Durable and Long Life of "Porcenell" baked on sheet steel which is bonded to ¼ inch Presdwood.

Easier to See—permanent Litegreen color with controlled reflectance factor of not over 20%.

Most Economical: SlatoSteel with its 22 g. steel weighs only 2½# per square foot. Saves original costs—structura costs—on transportation—on installation.

Double Service—With magnetic devices can double as bulletin board. An added interest to pupils.

Write for sample and detailed "specs"

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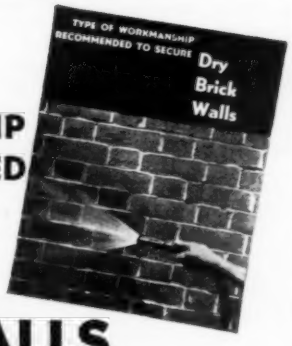
TYPE OF WORKMANSHIP RECOMMENDED TO SECURE
DRY BRICK WALLS



Leaky brick walls are probably the most misunderstood problem in the building industry, and the one about which the most misinformation has been published. Design, workmanship, and materials — all play a part in securing dry brick walls.

Dozens of color photographs illustrating good workmanship and bad, and their effects on leakage, are shown in the book (above). Its conclusions have been endorsed by thousands of leading architects, contractors, bricklayers and manufacturers of clay products. It is used as a text-book in scores of trade schools and engineering colleges. A free copy will be gladly sent you on request. Address Department 3, Louisville Cement Company, Louisville 2, Kentucky.

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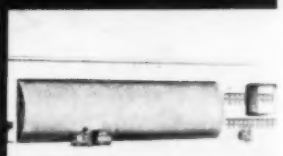
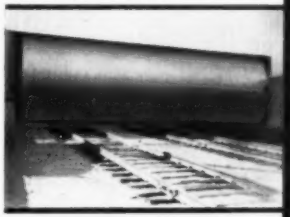
When these special jet hangers were designed for a U.S. Air Force Base in Greenland, McKee was assigned the task of building the huge Overdoors. McKee met the challenge with a counterbalanced door that opens in less than 30 seconds.





. . . a $4 million dollar rail-truck freight house.
Shown here is one of the McKee installations in the $4 million dollar rail-truck freight house built by one of the major U.S. railroads as part of its modernization program.

. . . a modern factory for giant road building machinery.
McKee Overdoors were used exclusively in this modern plant of one of the nation's largest builders of road machinery.

. . . service stations for hungry horsepower.
From coast to coast you'll find McKee Overdoors on service stations of the major oil companies.

. . . or a garage to accent the beauty of any home.
Here's a typical McKee Residential Overdoor installation. For beauty, convenience and long life there's no equal for McKee.

ARCHITECTS KNOW QUALITY
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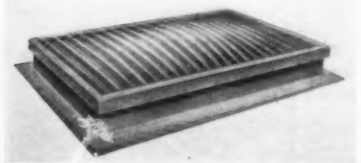

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REQUIRED READING

(Continued from page 66)

cept; the conviction that each problem holds within itself its own solution — these and other principles stand starkly forth with — surprisingly — a simplicity of phrasing that deepens the sense of their truth.

The volume consists not only of the "whys," but also of the "whats." Those who think of Wright as belonging to another age will blush at his statements about machine standardization, about various structural systems, about materials. Both those who are entertained and those who are irritated by his public theatrics will be moved by the revelation of his dedication, patience and plain hard work.

But perhaps the most impressive aspects of the man are the bigness of his thinking, the fertility of his imagination (read his three schemes for the Chicago World's Fair) and the depth of his convictions.

Recognition, as we have said, came to Wright thirty years late in America. Perhaps real understanding of his principles and healthy influence of his work will come about only thirty years hence. Perhaps it is inevitably a gradual process. What is hopeful is that a little, a very little — as if by osmosis — has already seeped through to some of the leading architects. This volume will help to clarify their awareness.

QUALITY SCHOOLS WITHIN THE BUDGET

Schools for the New Needs. An Architectural Record Book. F. W. Dodge Corp. (New York) 1956. 312 pp, illus. $9.75

THERE ARE CURRENTLY more square feet being built for educational purposes than for any other type of structure, excepting only commercial buildings and single family housing, according to the introduction of *Schools for the New Needs*.

This intense building program places heavy burdens on the budgets of local governments — and presents a challenge to architects. The first section of this book is devoted to a discussion of holding the cost of building in check and at the same time maintaining acceptable quality. This section is introduced with a reprint of an article by RECORD Senior Editor Frank G. Lopez on "What Makes a Good School Building?".

Throughout the book's following sections — one on elementary and one on secondary school buildings — cost data constantly appears.

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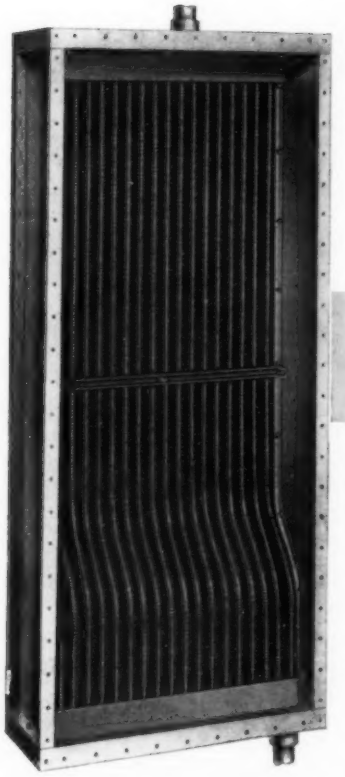

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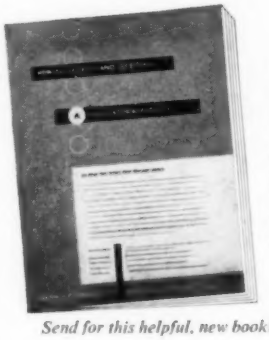

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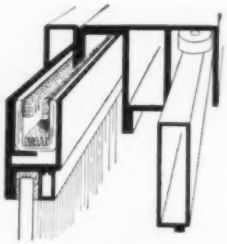

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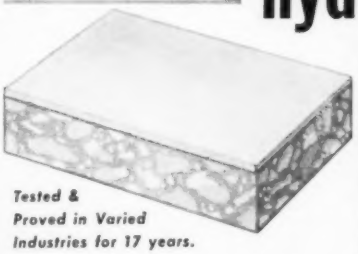

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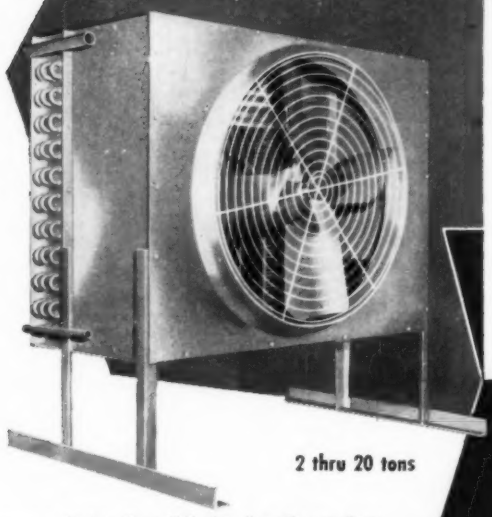

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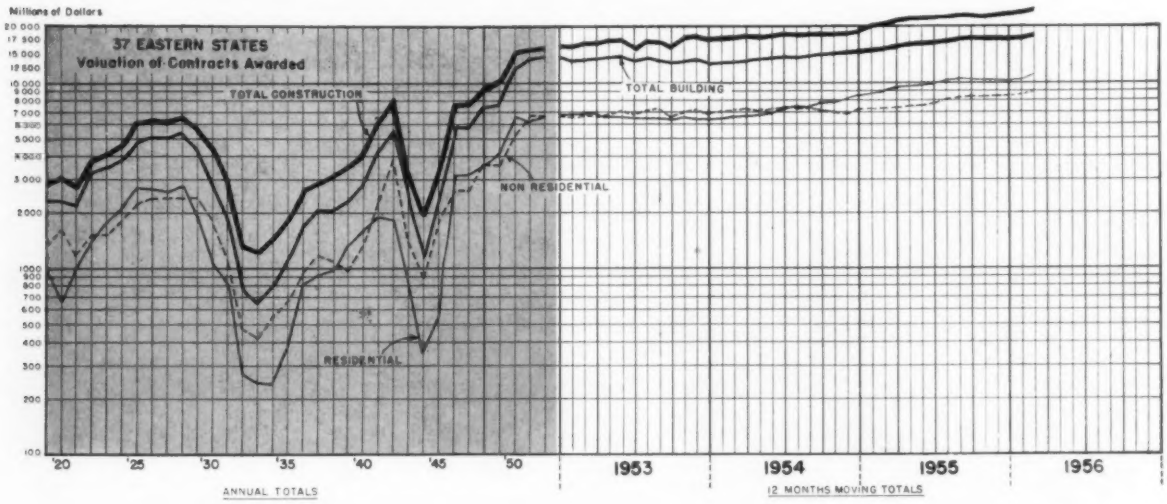
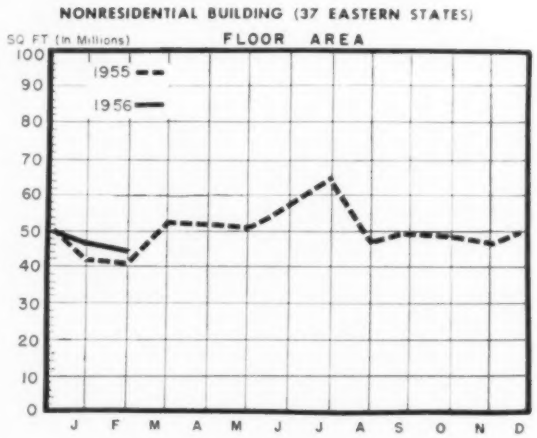
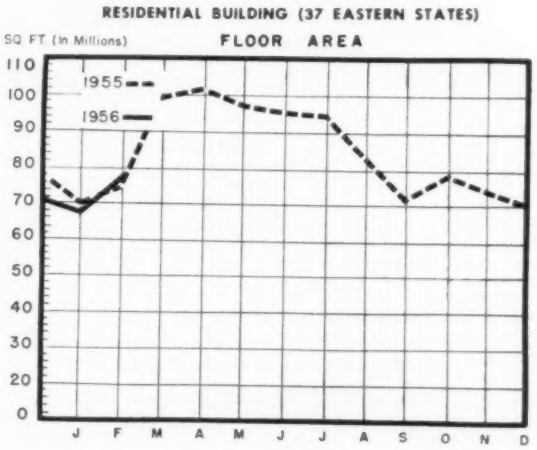


FEBRUARY TOTALS CONTINUE 1956 HIGHS

The year 1956 ended its first two months with a total valuation of construction contracts awarded in the 37 states east of the Rockies of $3,717,965,000, an increase of 21 per cent over the 1955 period and a new high record for the first two months of any year. F. W. Dodge Corporation reported last month that the month of February, like January, had set new high records in all three major Dodge categories, and the year-to-date totals were therefore likewise records. For the month of February, total dollar volume reached $1,859,737,000, 18 per cent over February 1955; nonresidential construction totaled $630,054,000, up 18 per cent; residential, $799,271,000, up seven per cent; heavy engineering, $430,412,000, up 42 per cent. On a cumulative basis, totals in the three categories for the first two months of the year were: nonresidential construction, $1,291,329,000, up 17 per cent; residential, $1,493,663,000, up six per cent; and heavy engineering, $932,973,000, up 69 per cent. F. W. Dodge noted that the first two months last year had showed even more sizeable percentage gains over the same period in 1954.

Charts by Dodge Statistical Research Service





Source: F. W. Dodge Corporation

SCHOOL AND COLLEGE BUILDINGS *

Year	Annual Valuation (in thousands)	Floor Area (in thousand of sq ft)	Number of Projects
1940	126,584	21,915	3216
1941	115,093	20,845	3349
1942	124,949	26,320	3825
1943	48,067	9,333	2355
1944	46,801	6,607	2573
1945	57,240	7,508	1504
1946	146,102	17,162	1758
1947	316,427	34,987	2745
1948	595,863	60,846	3852
1949	747,903	72,732	4749
1950	1,076,595	102,735	5896
1951	1,184,380	99,743	5618
1952	1,305,698	97,659	6044
1953	1,556,552	114,794	7057
1954	1,911,092	145,821	7746
1955	1,998,907	148,746	7933
1955—first 2 mos.	252,204	19,713	906
1956—first 2 mos.	327,067	22,393	1042

* Schools are the subject of Building Types Study No. 233, pages 221–252

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Lake Bluff School Lake Bluff, Ill.
Kenosha Public School Kenosha, Wis.
Central School Zion, Ill.
Salt Creek School Elmhurst, Ill.
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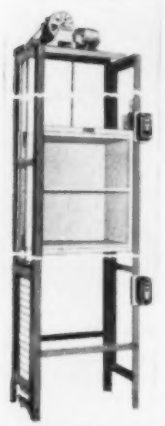

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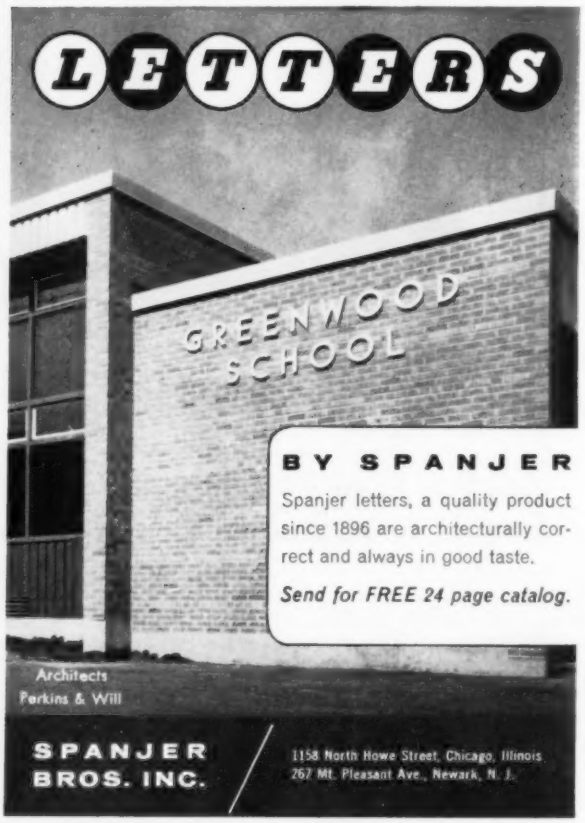

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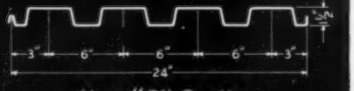

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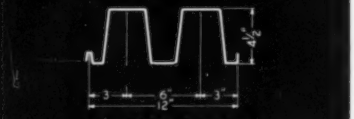

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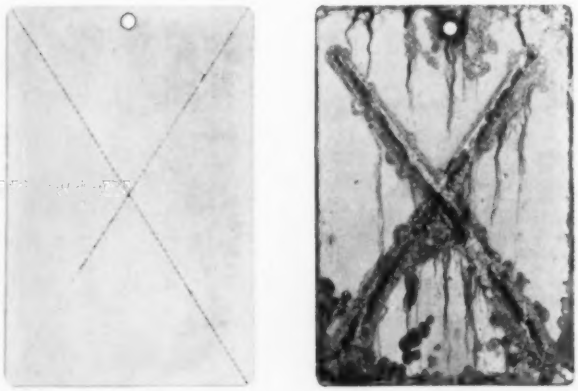

The steel panel at left was treated with Bonderite; the one at the right was not. Both panels were given a coat of Inland Epoxy Resin finish. After an "X" was intentionally scratched on them, the panels were subjected to the A.S.T.M. standard salt spray test for the same length of time. Note that in the finish over Bonderite, rust stopped at the scratch mark while it spread extensively over the plain steel panel.

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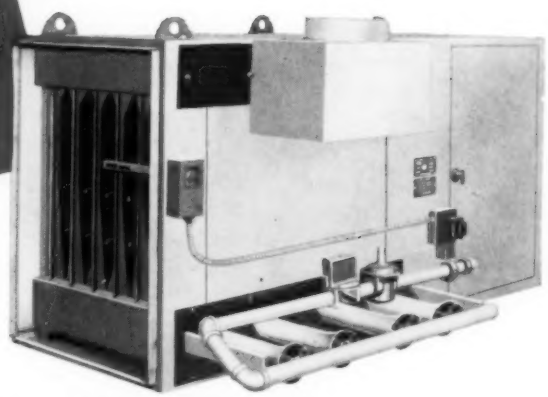

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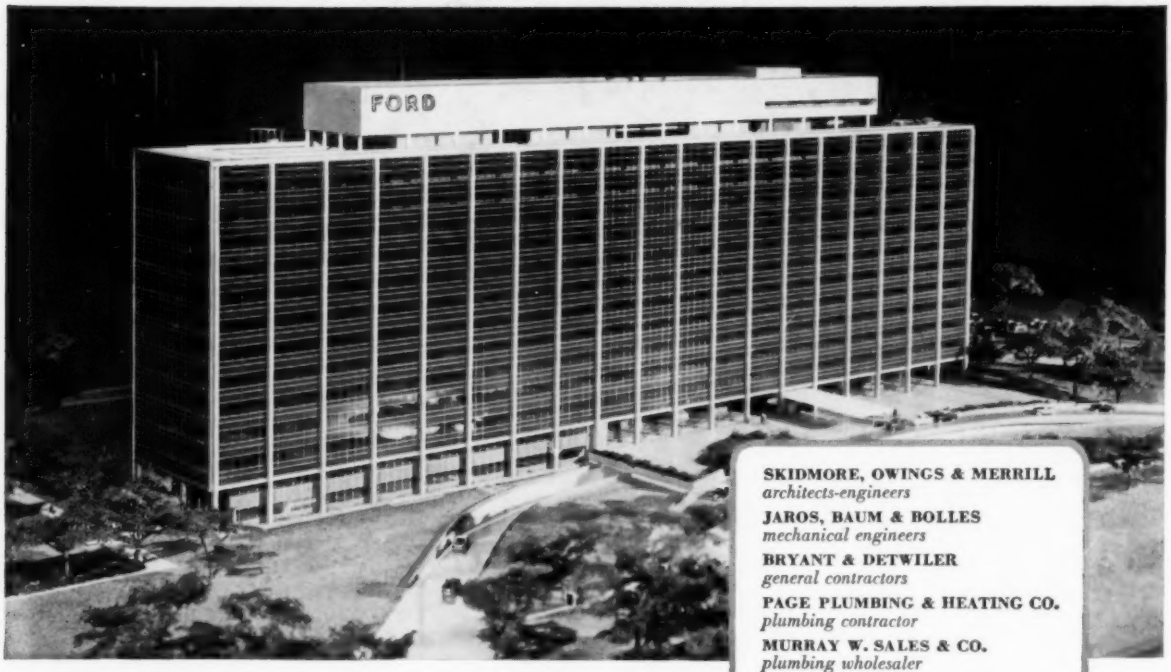

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